THE MARINE CORPS GAZETTE

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By Brigadier General Dion Williams

Salient Haitian Facts
By Colonel Frank E. Evans

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Vol. XV. No. 4

February, 1931

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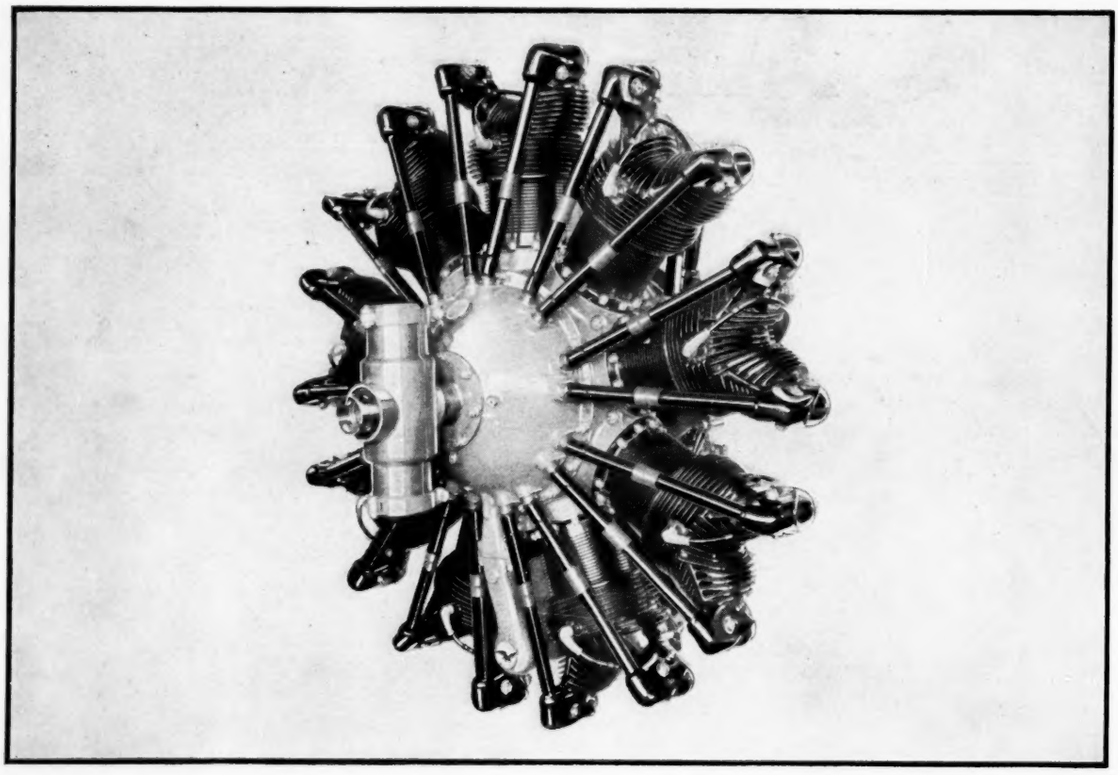

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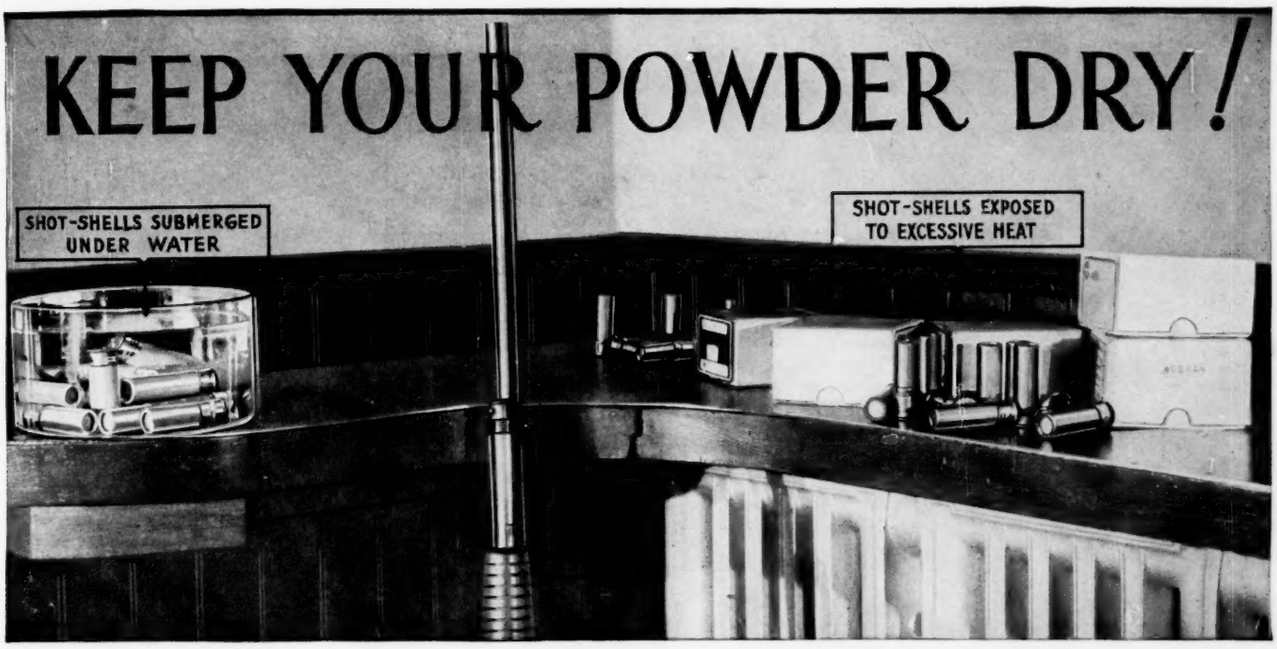

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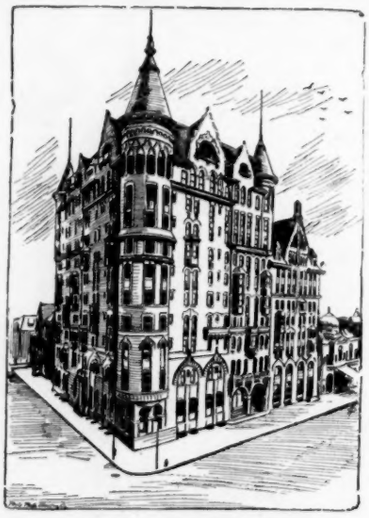

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OBJECT OF ASSOCIATION—"The Association is formed to disseminate knowledge of the military art and science among its members; to provide for the improvement of their professional attainments; to foster the spirit and preserve the traditions of the United States Marine Corps; and to increase the efficiency of its members."—Section 2, Article 1, of the Constitution.

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The Marine Corps Gazette

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VOL. XV FEBRUARY, 1931 No. 4

CONTENTS

The Temporary Defense of a Fleet Base 9
By Brigadier General Dion Williams, U.S.M.C.

Nicaraguan Impressions 13
By Captain John W. Thomason, U.S.M.C.

Salient Haitian Facts 14
By Colonel F. E. Evans, U.S.M.C.

The Navy-Marine Corps Problem 18
Anonymous

Parachute Jumping 19
By Captain James F. Moriarty, U.S.M.C.

The Line Company, a Marine Orphan 23
By Captain Maurice G. Holmes, U.S.M.C.

The Use of Gas in Minor Warfare 25
By Major Pedro A. del Valle, U.S.M.C.

"Nor By Sword Alone" 26
By First Lieutenant C. D. Baylis, U.S.M.C.

Bull Cart Transportation in the Tropics 29
By Major Roger W. Peard, U.S.M.C.

The Taking of Fort Riviere 31
By Major T. E. Thrasher, U.S.M.C.

Marine Corps Communications Personnel 34
By Captain Albert W. Paul, U.S.M.C.

Aviation in Guerrilla Warfare 37
By Captain H. Denny Campbell, U.S.M.C.

A New Barracks Far From the Sea 40
By Captain R. J. Bartholomew, U.S.M.C.

Andrew Mealy and the Mongoose 41
By Colonel Harold C. Reisinger, U.S.M.C.

Books of Interest to Marines 42
Reviewed By Brig. Gen. Dion Williams, U.S.M.C.

An Appreciation of Lieutenant Jeans' Article 46
By Colonel J. C. Breckenridge, U.S.M.C.

Three Historic Withdrawals From Overseas Operations 51
By Major Edwin North McClellan, U.S.M.C.

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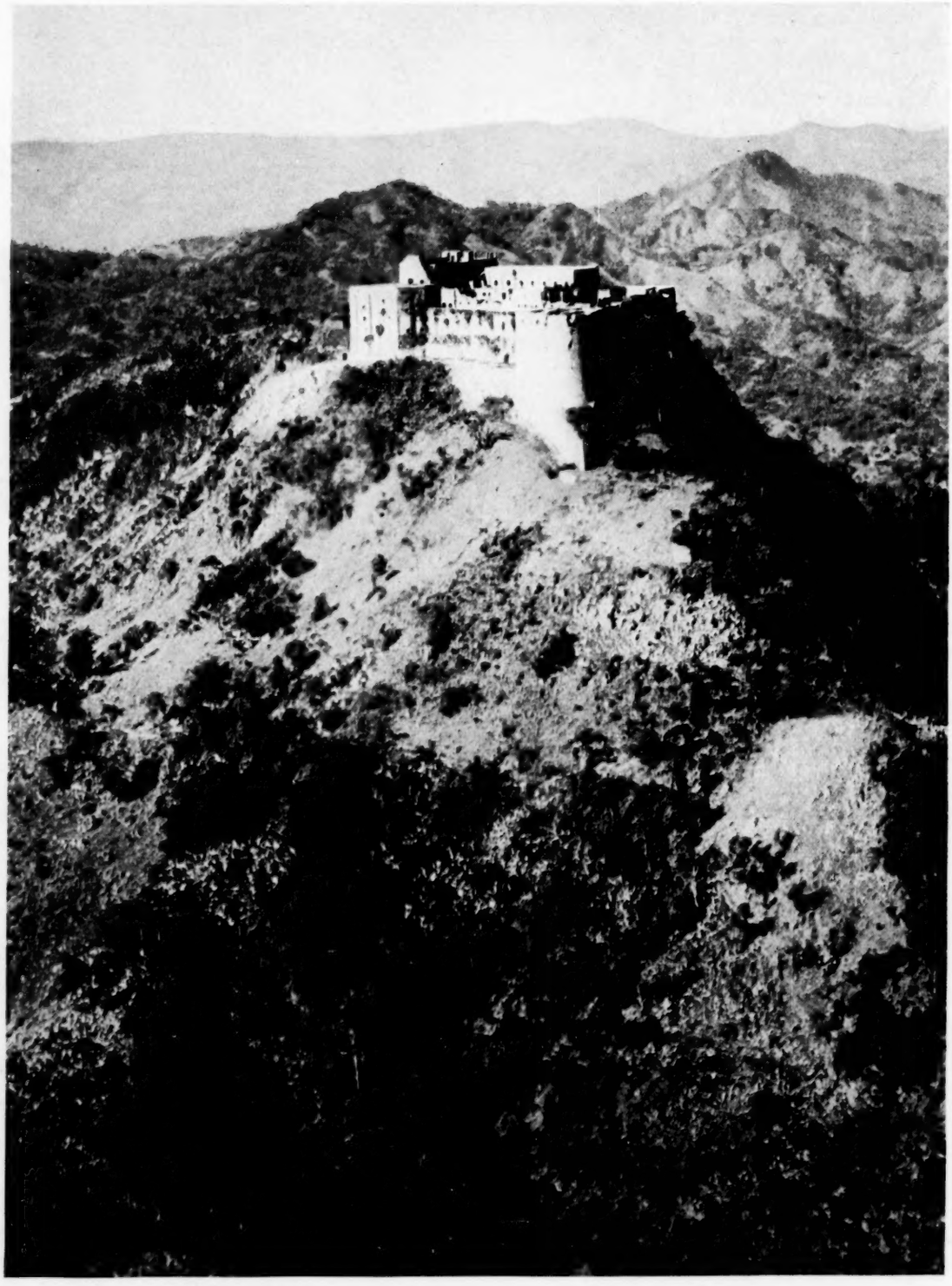

IN THE HEART OF THE JUNGLE—THE GREAT CITADEL OF HAITI
(Illustrating an Article on Page 14)

THE
MARINE CORPS GAZETTE

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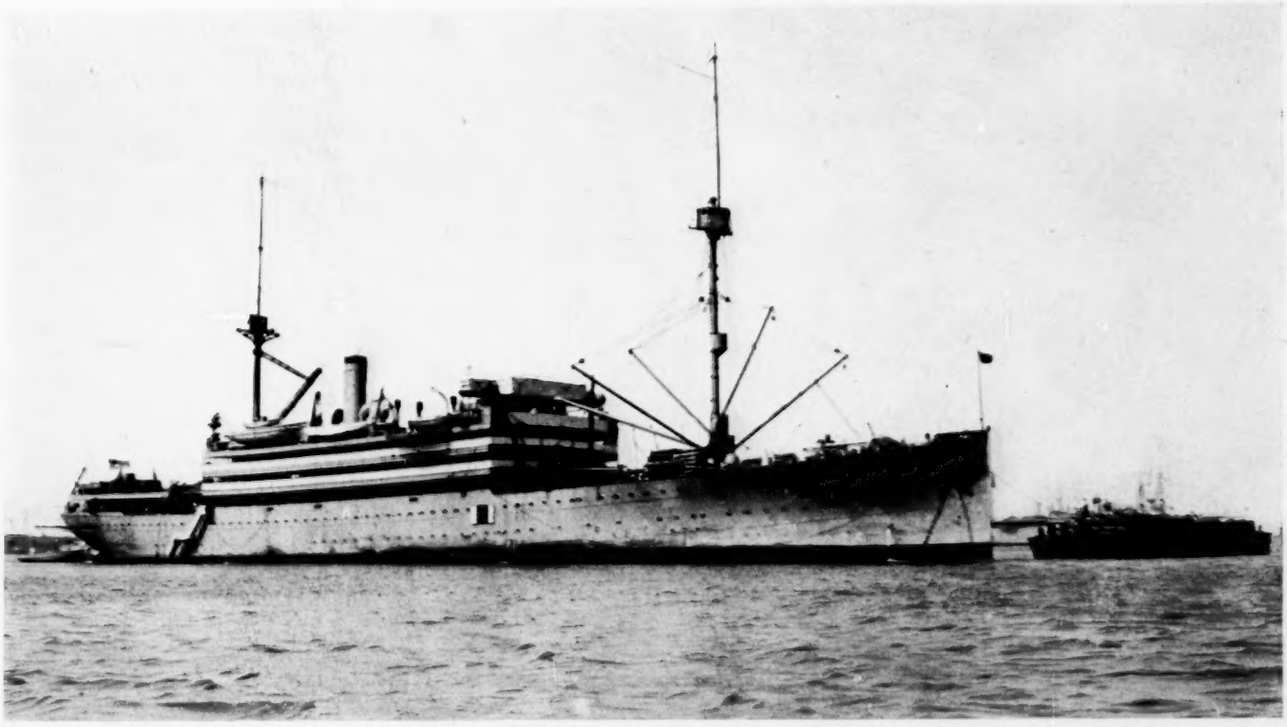
The Temporary Defense of a Fleet Base

By BRIGADIER GENERAL DION WILLIAMS, U. S. M. C.



THE U. S. S. HENDERSON, THE ONLY TRANSPORT ESPECIALLY DESIGNED FOR CARRYING MARINE EXPEDITIONARY FORCES

THE history of the American Navy from the opening of the War of the Revolution down to the present day contains a great many examples of able seamanship, gallant leadership and heroic conduct in battle which as a whole form the tradition upon which the spirit of the service must have its foundations; but in the first half of our life as an independent nation most of the famous sea fights which our historians record were single ship actions. The Revolution produced no example of a general fleet action or of a naval campaign on a large scale in over-seas operations; the War of 1812 from a naval standpoint was again composed of a series of single ship actions with the exception of the Battle of Lake Erie, where small squadrons of light ships were engaged; and the Mexican War produced little in the way of naval warfare since the Mexicans had practically no naval force.

The Civil War was fought entirely within the boundaries of our own country and while there were examples of landing operations from ships and squadrons and also engagements between opposing squadrons there was no occasion for distant overseas operations.

After the close of the Civil War the United States possessed the largest and most powerful navy then in existence but our whole country was tired of war and all of its manifestations and our statesmen could see no necessity for maintaining a great navy in readiness for overseas operations, especially when the resources of the nation had been well nigh exhausted by over four years of incessant fighting with the attendant destruction of much of the productive resources of the country. As a result the fine navy was allowed to disintegrate, fine ships were decommissioned and tied up at navy yard wharves to rot and decay, and, although the epic fight between the *Monitor* and the *Merrimac* had proved the futility of the wooden ship and pointed the way to the armored iron ship with revolving turrets, the cruising squadrons of the U. S. Navy continued to be made up of wooden vessels until a quarter of a century after the close of the Civil War.

Then the insistence of a few naval officers and

statesmen who could foresee the needs of the country for an adequate navy compelled the Congress to begin the building of a modern steel navy and the results are evidenced today by the great U. S. Fleet with its various units to carry on operations on the sea, beneath the surface of the sea, and in the air above the sea.

Since the beginning of this modern Navy officers having the best interests of their country and their service at heart and reasoning out the future requirements from a study of the history of the past realized the necessity of a fleet that should comprise all of the various elements that may be required or prove of value under the varying conditions of war, and in the many discussions that evidence the trend of this thought we frequently hear of the "well-balanced fleet." This comprehensive term is broadly used to express the ideal of a complete naval force, containing all of the required elements in the proper proportions to meet probable requirements, each element as near perfection as the skill of the designer and the builder can devise, with crews trained to the ultimate "fighting edge," and all ready to sail at short notice for any part of the globe and engage any possible enemy with good prospects of success. Such a fleet is truly the "Nation's first line of defense" and upon it must depend the very existence of our nation in its present high place.

All arguments of the professional "Pacifist" to the contrary, such a naval force will insure to the country whose flag it flies long periods of unbroken peace, during which our people may exert all of their energies in developing to the full the wonderful natural resources of this great country, or, with confidence in the support of a strong Government, go forth into the markets of the world and freely bid for the high prizes of commerce. It is, in fact, a great potential machine against which any other nation must hesitate to move, and which in time of need may go forth against any enemy with the best prospects of a speedy successful outcome, thus interrupting for the shortest possible time the peaceful pursuits of our own people and those of friendly nations.

A study of the results of the work of the leaders of thought and action in our naval service in recent decades will show how this problem of the well-balanced fleet has been worked out in theory, and as far as practicable in practice also, by the provision of battleships, cruisers, torpedo craft, submarines, mine layers, naval air craft, fuel ships, supply ships, hospital ships, and other ships of the Train including transports; while others have centered their attention on the provision of the great permanent naval bases for the construction, repair and upkeep of a great navy. At the same time attention has been given to the provision of the temporary bases that will be required in the theatre of overseas naval operations from time to time during the progress of any future naval campaign, to which our usage has given the name of Naval Advanced Bases. A discussion of this latter phase of the study of naval warfare is the purpose of the present paper and it appears particularly appropriate that such a discussion should appear in a magazine devoted to the interests of the Marine Corps since it is the important duty of this corps to furnish the men and material for the defense of such temporary bases for the Fleet.

This question of temporary bases for the ships of the Fleet during the progress of a naval campaign overseas at a distance from the permanent home bases of the Navy is by no means a new or unusual one; in fact it is as old as the fighting ships themselves and applied to the early fighting vessels of the Mediterranean in the days of the Greeks and Romans as well as to the great steel fleets of today, the only difference in principle being that distances were much shorter in early days. In the days of sailing ships single ships and squadrons could keep the sea for months without calling at the base ports, in fact as long as the supplies of food and water held out; but with the advent of mechanically propelled ships of war a new problem entered into the question due to the necessity of replenishing the fuel supply whether it be coal, oil, or gasoline. The ships of today must have fuel from time to time and they can only take it aboard with certainty and despatch in comparatively smooth water; and as the picturesque sails have disappeared from above the decks of the ships of the navy, so has likewise disappeared a great part of that freedom of movement which characterized the sail propelled ships of the days that are passed. It has become quite evident that the fighting ships of the navies of the present and future are destined to be tied to their bases, permanent or temporary, by the invisible but strong ties of their steaming radii.

Some sort of port facilities where the ships of a naval force operating at a distance from the home ports may refuel, refit and repair and where the ships of the Train may find safe anchorage protected from the attack of enemy cruisers, submarines and aircraft raiders has become a recognized necessity. Many years past, strong colonial governments, recognizing this fact as taught by bitter experience, and knowing that their very existence as great nations depended upon seapower, began the systematic acquisition of suitable harbors on the routes between their homeland and their outlying possessions and dependencies for this purpose and spent vast sums in fortifying and protecting these farflung outlying bases.

In the days of coal as the chief fuel for warships the primary role of many of these stations was as coaling ports, but the protection of their fleet and smaller naval units on distant stations from attack and capture by superior enemy forces was an additional reason for fortifying these strong points in the lines of colonial defense. Still, as time went on and the numbers of the permanent outlying bases increased apace, the force of men required for their permanent garrisons became prohibitive, for if the regular establishment of the Army were required to furnish strong garrisons for all of these outlying stations none would be left to form a mobile army.

Thus political and financial considerations operated against the retention of a vast chain of fortified and strongly garrisoned overseas naval bases and the general abandonment of many such stations followed in due course.

One of the alternatives discussed for the supply of the Fleet abroad with fuel and provisions and ammunition was to carry these supplies with the fighting fleet in suitable ships of the Train. This course it was found would encumber the fighting Fleet with a large number of non-military vessels demanding protection from the fighting ships, and would end in diverting a large proportion of the fighting ships from their proper role to that of guards for the Train.

ILLUSTRATING THE USE OF PONTONS IN SHIP-TO-SHORE OPERATIONS

Another scheme to obtain fuel and provisions for a Fleet operating at a distance from the home bases was the suggestion that these supplies be purchased from neutrals; but, in spite of the fact that many students of international law endeavored to obtain the agreement of the great nations to the attractive theory (from the neutral standpoint) that "neutral ships give neutrality to their cargoes," the nations that stood to lose by such neutral trade in war supplies to belligerent warships would not agree and the policy of allowed search and seizure of neutral cargoes destined for belligerent uses made this line of supply too uncertain. Consideration of these questions involving the rights of both belligerents and neutrals in seaborne traffic during war has resulted in practical agreement among the principal nations of the world which so closely define the rights and duties of neutrals in time of war as to practically preclude the dependence of belligerent fleets upon supplies of fuel, ammunition or provisions obtained from neutrals.

Likewise in our own country when the New Navy had its humble beginnings in the Squadron of Evolution of 1890, there arose a demand upon the part of the Navy and its supporters in the Government for the acquisition of outlying coaling stations so located as to best serve the increasing needs of our growing seapower. Various schemes for obtaining control over certain ports and islands in nearby and distant waters were the results of this agitation and there was talk from time to time over the prospective acquisition of certain islands in the West Indies, the far Pacific archipelagoes, and on the coasts of distant lands.

It is interesting to note here that since that date the United States has actually acquired Porto Rico, the Virgin Islands, Guantanamo, the Panama Canal Zone, the Hawaiian Islands, Samoa, Wake Island, Midway Island, Guam, the Philippines, and has also obtained treaty rights looking to the use of Corn Islands and the Gulf of Fonseca for naval uses; and that many millions have been spent in the development and fortification of a number of these outlying stations. However, the trite saying that "History repeats itself" is not without application here, and we are also brought to the same conclusion that stopped other nations in the development of outlying naval fortified bases; namely, the large number of men required for the manning of such permanent establishments beyond the continental limits, not to speak of

the great cost in money required for their adequate upkeep. In any rational plan of national defense the most important of such outlying bases must be adequately and constantly defended, but to fortify, man, and maintain a great number of such stations for the reason that they may at some time in the distant future be required as bases for the Fleet in operations against a foe as yet unnamed, can scarcely be justified on any reasonable grounds.

Thus we see that the routes overseas can not be determined beforehand with sufficient accuracy to indicate just where a temporary naval base may be required in a campaign that will depend for its theatre upon the enemy and his movements, and that to provide beforehand sufficient outlying bases for such purposes would be practically impossible. We can determine beforehand that our Fleet must go overseas to meet and defeat the enemy Fleet before a war with a great power across the seas from us can end in success for our arms. There are many ports scattered over the shores of the seven seas which might be suitable under given conditions and which might be occupied under war conditions as advanced bases for the use of the Fleet during one or more phases of the naval campaign overseas.

Since it is not practicable or even possible to acquire and fortify and man all such sites before the advent of war some other plan must be resorted to; and the most appropriate answer yet devised to the question is for the Fleet to carry with it the men and material for the establishment, development and defense of the temporary naval base that will in all probability be required by the Fleet during the prosecution of its mission overseas to seek out and destroy the enemy Fleet and prepare the way for the transportation overseas of a large military force for land operations to conquer the enemy land forces on their own soil. *In other words the Fleet must carry its temporary base armament and garrison with it in readiness to seize the site suitably located with reference to the plans of the Admiral of the Fleet for the naval advanced base or bases that may be required; and must be ready to move this advanced base force and armament from one site to another to meet the requirements of the Fleet as the campaign progresses.*

This is the modern conception of the naval advanced base and in order to determine as best we may the application of the theory to the present needs of the Navy and fit it in with the present strength of the whole naval establishment in peace and its probable expanded strength in the first phase of any probable war, we should consider what has been done in the past both in war and in peace to meet the conditions of the problem and from such consideration of the past experiences, the means at our disposal, and the probable requirements of the future, determine upon a plan which will meet the requirements with the men and material available.

In accordance with the present policies of the Navy and the regulations laid down by competent authority for the guidance of all in the naval service, the duty of manning the defenses of naval advanced bases and holding them against enemy attacks has been assigned to the Marine Corps; and the importance of the duty, the necessity for long training to meet the requirements, and the varied nature of the many duties involved in the prosecution of the mission assigned make the subject one of surpassing interest to every officer and enlisted man in the Corps.

Having this in view and with the idea of bringing the subject under discussion up to the point where definite plans can be perfected for the study, preliminary training and provision for proper equipment for the tasks involved, let us take note of some former experiences having a bearing upon the subject. To do this a brief glance at some of the historical aspects of the case will be of assistance in clearing the way for study of future requirements. Our early wars gave little experience in this line that would be of particular value today though it should be borne in mind that every forcible landing on enemy soil from attacking ships has provided an experience that bears upon one phase of our subject, namely, the seizure of enemy territory by an overseas expedition.

The Spanish-American War was frequently predicted by international observers of events that led up to it but despite these warnings the declaration of war found the United States unprepared for the struggle in many ways, not the least of which was that we had no coaling stations for our fleet near enough to the coast of Spain nor to the southern coast of Cuba to be of value to the Fleet in blockade or protracted siege by sea. Whether or not this fact influenced Admiral Cervera in his choice of a harbor of refuge for his squadron after the voyage across the Atlantic from Spain to Cuba can not be definitely determined, but it is an historical fact that of the several suitable harbors on the coast of Cuba he chose for his destination the harbor of Santiago de Cuba which was of all the Cuban ports the farthest removed from our own coaling base at Key West.

This decision of the Spanish Admiral at once forced Admiral Sampson to establish a blockade of the port so chosen by the enemy and a nearby coaling station and base for the ships of the blockading force at once became a necessity. Such a port was available at Guantanamo and it was at once seized and a force of Marines was landed there to form the land defense for the chosen base port.

The total available naval force of the enemy in the Western Atlantic was closely blockaded in Santiago by the ships of Admiral Sampson's United States Atlantic Fleet and for this reason it was not absolutely necessary for the entrance to Guantanamo Bay to be defended by mine and gun defenses; but had Spain possessed a second naval squadron in Caribbean waters or even a few fast cruisers outside the blockading line such defenses for the naval base at Guantanamo would have been mandatory and would have been provided in the form of mine fields across the harbor entrance and shore batteries to protect them against sweeping operations of the enemy. Thus we see that Guantanamo Bay in 1898 was a naval advance base in fact though local circumstances made its heavy defense unnecessary during the short campaign that ended in the destruction of the Spanish fleet by the ships of Admiral Sampson's fleet in the action that followed the attempt of the Spanish Admiral to run the gauntlet of the American Fleet and escape to the open sea with the possible intent to seek sanctuary in a neutral port.

In another theatre of naval operations of the Spanish-American War events likewise demonstrated the necessity of naval advanced base operations. The declaration of war in April, 1898, found Commodore

(Continued on page 53)

NICARAGUAN IMPRESSIONS

From the Sketchbook of
CAPTAIN JOHN W. THOMASON, JR.

A HILL MARINE

AMMUNITION DETAIL

VOLUNTARIO"

"JEFE"

CAMP FOLLOWERS

"SANDINISTA"

SALIENT HAITIAN FACTS

By
COL. FRANK E. EVANS
U. S. M. C.

IN HAITI THE MOUNTAINS ARE HIGH AND THE CLOUDS HANG LOW
View From a Peak in Northern Haiti

UNDER the direction of Brigadier General John H. Russell, U. S. Marine Corps, and at that time the American High Commissioner to Haiti, a Committee on Information was organized in 1928 to prepare an official Handbook on Haiti. Each of the Treaty Services was represented on this committee, charged with the preparation of authoritative information in the sphere of its respective field, and the writer, as Chairman of the Committee, had the task of assembling, editing and preparing for publication a 19,000 word text-book. It was designed to issue this Hand Book to leading newspaper and syndicate services, to steamship and tourist agencies, to all members of Congress, and to other governmental officers, and to the leading libraries of the United States.

The need for such a publication had long been envisaged. Until General Russell assumed his post as High Commissioner, statistical and other data of importance on Haiti was extremely difficult of access, in many cases unprepared, and one of his first official acts was to prepare such data for publication and reference. Today an exhaustive official report, covering the activities of all the Treaty Services is printed and distributed annually through the agency of the State Department, and the Financial Adviser, in particular, issues monthly bulletins of interest, while other services issue their separate reports, attractively compiled and lavishly illustrated.

The Hand Book, although completed and set up in type, was not destined to be issued, as the hurricane which swept southern Haiti at that time, and the beginnings of today's widespread economic depression, prevented its complete printing and distribution. It seems advisable, however, that the salient points covered in the Hand Book should be made available to the Marine Corps. In no other form, under a single cover, is this information available. Under the Treaty provisions the United States will not evacuate Haiti until 1936, and, until the Haitian Loan is fully discharged, our financial supervision of the island republic will continue. Future events may see the United States assuming a resumption of its present activities in Haiti, following our withdrawal in 1936. Because of these reasons officers and men of the Marine Corps who have not had service in Haiti are liable to such service. Officers who have served there may return for another tour, and the present article, based on the Hand Book, should prove of value and interest to them.

It may be noted that the statistical figures contained herein are as of the year 1927. These figures, representing a normal state of economic conditions, would change but little if compiled to include 1930, and the need for their revision is therefore not acute. Certain changes, notably insofar as they relate to changes in the governmental field, have been made, and it is believed that the following chapters mirror accurately the Haiti of today. Likewise, those officers who have served in Haiti have, in the main, looked back on their service in the Black Republic, or, as Napoleon picturesquely described it as "the proudest gem in the necklace of France's colonial possessions," with affectionate memories, and to them the chapters that follow may serve as a valued souvenir.

Haiti, with an amazing and dramatic history as its background, is one of the least known and appreciated of all the countries of the romantic Caribbean area. Following its discovery by Colombus in 1492, and its cession to France by Spain in 1697, Haiti won its independence after a prolonged and sanguinary struggle that culminated in 1804. For the greater part of a following period of one hundred and eleven years it was devastated by revolutions that brought what had once been France's richest colonial possession to conditions of bankruptcy and anarchy. In 1915 intervention by the United States became necessary, and Haiti's rehabilitation was begun.

Haiti today has made great strides towards economic and financial betterment. Throughout the Republic the order of a New England village greets the

traveler. In all the West Indies there is not a cleaner land. There is none of greater natural beauty or more appealing interest. Yet little known Haiti, with its rich agricultural and forestry possibilities, and its lure for the tourist impatient of the beaten paths of travel, lies within 1,375 miles of New York City.

Geography

The Island of Haiti, or Santo Domingo, lies between the parallels of 17 degrees 30 minutes and 20 degrees North Latitude, and the meridians 68 degrees 20 minutes and 74 degrees 30 minutes West Longitude. Cuba lies due West across the famed Windward Passage, while to the East the Mona Passage separates it from Porto Rico.

The total area of the island is 29,000 square miles, of which the Republic of Haiti occupies the western third, or 10,200 square miles, approximately that of Vermont.

Topography

The coastline of approximately 1,000 miles is bold and sweeping, and indented by scores of bays and coves that once sheltered British, French and Spanish squadrons, privateersmen and notorious pirates. Up from this historic coast line tower five rugged mountain ranges, running generally S. E. to N. N. W. The highest peak in Haiti is Morne la Selle, or Saddle Mountain, with a height of 8,790 feet above sea level.

Five important delta plains, foothills and narrow valleys not only open up countless vistas of rare scenery, but afford an amazing variety of tropical and temperate zone products.

There are many streams flowing from the mountains into the Atlantic on the North, the Windward Passage on the West, and the Caribbean on the South. Largest of these is the Artibonite River with a length of 300 miles.

The Lakes Saumatre and Miragoane are the largest in Haiti. The former is 15 miles in length and 8 miles in width.

Climate

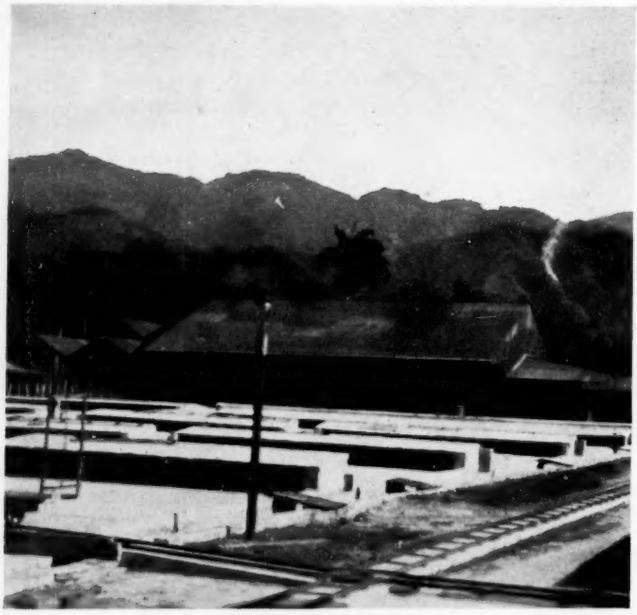
Haiti has a climate rarely excelled in the tropics, remarkable in its uniformity and freedom from humidity. Tourists will find in the winter months weather rivaling that of Nassau or Havana.

The hottest month in Port-au-Prince, July, has a mean temperature of 84 degrees, while the coldest, January, registers 75 degrees mean temperature. In a period of more than thirty years the hottest recorded was 100.2 degrees, and the coldest 60.8 degrees. Night temperatures are usually 10 degrees cooler than those of the day.

Observations made at Furcy, at an approximate altitude of 5,000 feet, where pine trees and strawberries are found, indicate that its mean annual temperature is 65 degrees. Another well-known mountain area is that of Kenskoff with an altitude of 4,615 feet. Both are easily accessible by horses from Petionville, the summer residence of the President, which is but twenty minutes by automobile from the capital. Furcy is four hours distant and Kenskoff two hours. At the latter place, there is a small but excellent French hotel; summer homes are increasing and plans are under consideration for a sanitarium.

There is marked variation between the temperatures of the dry winter months, October 15 to March 15, and those of the summer months when the rainy season is on. A distinct absence of humidity greatly relieves the oppression experienced with high humidity and temperature that is so characteristic of most

SANS SOUCI, THE PALACE OF "KING HENR I" AT MILOT, NEAR CAPE HAITIEN



A Coffee "Usine" in the South of Haiti

tropical lands. From the standpoint of health in relation to climate, with particular reference to the five winter months, a more salubrious climate would be hard to find. With respect to the rainy season, it might be noted that in Port-au-Prince, for example, rains rarely begin before sunset and therefore offer no obstacle to riding, bathing, golf, tennis or sailing. In but few sections of the island do rains begin until late in the afternoon, while morning rains are very rare.

With the exception of a comparatively limited stretch of the Caribbean side of Haiti's southern peninsula, and there only in certain months, hurricanes are unknown and heavy gales or high winds that range above 20 miles an hour are also practically unknown. In the capital city the winds set in from the hills in the morning, changing 180 degrees shortly after noon, coming then from the sea and with the exception of but one or two hours after sunset the breezes are constant and refreshing. In other sections of the country, notably in the north, the inhabitants enjoy constant trade winds from the sea. This absence of hurricanes and gales has benefited Haiti economically, for crops such as bananas are not seriously devastated, and shipping enjoys a striking immunity in Haitian waters.

Population And Language

The total population is estimated at between 2,000,000 and 2,250,000, or approximately that of Oklahoma, with an average density of 200 per square mile. The density of New York State, 200; Porto Rico, 325; Cuba, 57; and Santo Domingo, 39, well illustrate the great reservoir of labor available in Haiti. Of this total population approximately 80 per cent live in the country districts. Haiti, however, is by no means over-crowded, for her soil and climate will support considerably more than her two millions.

Port-au-Prince is the largest city with a population of approximately 120,000. Cape Haitien, Cayes, Gonaives, Saint Marc, Jacmel, Port-de-Paix, Jeremie and Petit Goave, all seaports, range as listed from 25,000 to 6,000.

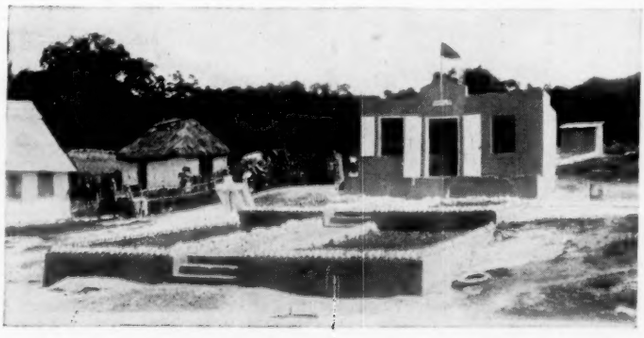
The official language and that of the educated classes is French. The great mass of the people, however, speak Creole, a patois derived mainly from French with a scattering of Spanish and English terms. The creole French is a corrupted form. The English terms have crept in since the American intervention.

History

Haiti, known to the Carib natives as Quisqueya, or Haiti, was discovered by Christopher Columbus on December 6, 1492 and named by him Hispaniola. His flagship, the Santa Maria, was wrecked on Christmas Eve in the vicinity of Cape Haitien. With its salvaged timbers the Fortress La Natividad was built near the site of the present city, the first settlement of white men in the New World. When he returned a year later, it had been wiped out by the Indians, infuriated by the cruelty of his men. The anchor of the flagship, which was exhibited by the Haitian Government at the Chicago World Fair and at the Philadelphia Sesquicentennial Exposition, is now in the entrance hall of the Haitian Gendarmerie in Port-au-Prince.

Spain ceded Haiti to France by the Treaty of Ryswick in 1697. Under its administration it was ranked as the richest colony of the world. Sugar, coffee, cotton, indigo and dye-woods were exported to Europe. Irrigation systems, great plantations, and splendid roads in the North and in the Plain of the Cul-de-Sac, at the threshhold of Port-au-Prince, had made the French part of the island famous throughout Europe. The foundation of the amazing richness of Haiti, which reached its peak between the years 1758-1791, was slave labor, first imported into the island by the Spanish soon after its discovery. In 1791 the total number of slaves was 480,000, while the total population was but 536,000. There were approximately 3,000 coffee plantations, 3,000 indigo plantations, and 800 estates of both cotton and sugar. One third of France's foreign trade came from Haiti.

The growing severity and harshness of the French rule culminated in a revolt of the slaves in 1791. Under the brilliant leadership of Toussaint l'Ouverture it assumed formidable strength, and when that leader was deported to France, there to die in prison, Jean Jacques Dessalines took up the struggle. On New Year's Day, 1804, with France's forces routed by battle losses and devastating fevers, Dessalines proclaimed Haiti's independence. The official name of



A Small Hill Station of the Garde d'Haiti

the French colony, St. Domingue, was abolished and the original name, Haiti, meaning "mountainous country," restored.

At the end of this sanquinary struggle little evidence remained of French occupation. Irrigation systems were destroyed, the fine roads ruined by neglect, plantations had been burnt and their buildings razed to the ground, for in the eyes of the victorious blacks all were symbols of the harsh slavery to which they had been subjected. Traces of them may be found in all parts of the island, overgrown by the jungle.

Dessalines, at the height of his power, was assassinated in 1806. In the following period of 108 years prior to the intervention of the United States, civil wars and revolutions marked the history of Haiti. Twenty-four executives were in power during that period. Of this number 17 were driven from office by revolutions, two of whom were assassinated. A total of 5 died while in power, 3 of the deaths being from violent causes. Eleven of the total number served less than one year each. In the four years immediately preceding the American intervention on July 28, 1915, Haiti had been ruled by 6 Presidents.

The intervention of the United States was precipitated by the summary massacre of 167 political prisoners by President Guillaume Sam, whose power was threatened at the time by a revolutionary force. The horror excited by this massacre culminated in his seizure by an infuriated mob which killed him, and then dismembered his body. At this critical time Haiti was bankrupt, its government impotent to maintain order, its credit exhausted, and its standing among the nations at low ebb.

Citadel

There is no more impressive or spectacular ruin in the New World than the famous Citadel, 14 miles south of Cape Haitien. It has often been referred to as the "eighth wonder of the world." Its story is inseparably woven with that of its builder, Henri Christophe, who rose from the obscurity of a slave to the title of Henri I, the only King in the long list of Haiti's rulers.

Born in the British island of Granada in 1757, Christophe came to Haiti in his youth as a slave. Later he was a waiter in a Cape Haitien cafe; steward on a French man-o'-war; a volunteer in the force of 800 blacks and mulattos that fought with the Americans under the command of Comte d'Estaing and Lafayette in the capture of Savannah in 1779; and a general officer in the French forces of St. Domingue.

Following the assassination of Dessalines in 1806, he was elected President, but refused the office under

New Bridge Over the Artibonite

A Typical Home in the Foreign Colony

a constitution drafted by his rival, Petion, which reduced his authority to that of a figurehead. He was elected President of North Haiti by his followers and in 1811 had himself proclaimed King Henri I, and was crowned with elaborate pomp at Cape Haitien. His royal palace at Sans Souci was the scene of royal birthdays and levees, and all the ceremony of a European court was followed there. He created an hereditary nobility, a royal academy and a royal theatre, built a second royal palace and six chateaux, organized an efficient army and established schools. Under his iron rule the commerce of Cape Haitien rivaled the days of the old French regime.

To guard against rebellion and to meet the always feared French invasion, Christophe began the construction of the Citadel. Its site was on the summit of Bonnet-a-l'Eveque, or the Bishop's Hat, 2,500 feet above sea level in the heart of a jungle. Every bit of stone, brick, wood and metal of this massive fortification, and more than 100 pieces of artillery, the heaviest weighing five tons, were transported from the plain below and put into place by man power. It is claimed that 20,000 lives were expended in this stupendous undertaking.

Felix Ferrier, referred to both as a Scotch engineer, and as a mulatto engineer trained in France, was its architect, and Christophe named it the Citadel la Ferriere. Legend has it that, as it neared completion, Christophe hurled him to death from its highest parapet so that the secrets of his mighty fortress might be preserved.

According to Haitian tradition, Christophe once marched a company of his guard into the abyss below to demonstrate to an English Admiral the discipline of his men.

The eastern side is the longest face, commanding the most vital approach. Its walls are 140 feet in height, and its main gun corridor 270 feet long and 30 feet wide. Below it is the abyss of the Grand Boucan, with a total sheer drop of 700 feet. One of the most striking features is the "prow," on the southern flank of the northeast bastion. It was fissured

(Continued on page 65)

The Navy-Marine Corps Problem

A Student's View of the Experiment

FOUR years ago, when the course in landing operations was first installed as a part of the Field Officers' Course at the Marine Corps Schools, the possibility of cooperation with the Naval War College was freely discussed. It was evident that much could be gained by the students of both schools if they worked together on a naval problem involving advance base operations in support of the fleet.

Everyone concerned admitted the value of the idea. In fact, from the first it had no enemies. Had there been opposition to the plan it might have been put into effect at the time. If it had been attacked, its friends would probably have rallied to the defense and put it through then and there. It would have become a *cause*—something worth fighting for. But with no opposition to sharpen the edge of their enthusiasm, the advocates of the plan postponed its consummation from year to year until four years rolled by without any definite action. The staffs of both schools were busy with their own affairs. The adoption of the scheme involved some rather awkward changes in schedules which were already filled to the last available hour. There was a very natural reluctance to change the existing system, and each school continued to teach overseas operations in its own way.

Last June, however, a new President took charge at the Naval War College. On his staff of instructors was a Marine officer, Colonel P. M. Rixey, who was determined to revive the languishing plan for a cooperative problem. When he laid the matter before Rear Admiral Harris Lanning, the new President, he received his support in the form of prompt and effective action. The plan was taken up with the Navy Department and with Major General B. H. Fuller, then assistant to the Major General Commandant. The result was a conference between Commander H. K. Hewitt, who was to prepare a War College problem of the desired type, and Major H. H. Utley, instructor in overseas operations at the Marine Corps Schools. The report of the conference was approved by both services, and the Marine Corps Schools undertook to solve a problem involving the Marine Corps' contributory plan to the general plan of the Blue Admiral for the defeat of the enemy fleet and the defense of the Blue coast against enemy naval operations.

In order to coordinate its work with the schedule of the War College, the Marine Corps Schools had to take up the problem a little earlier in the course than the staff desired. The students were hardly far enough advanced to deal with so difficult a proposition. Upon receipt of the advance copy of the problem it was realized that the assignment of the available land forces to the two separate task groups and the preparation of the plans of each task group would consume more time than could be allowed, if the students did all the work. With this in view it was decided that the school staff should personify Major General M, commanding the Marine Corps forces, and make the task assignments prior to the time the students actually started work on the problem. The instructor and students, working together, were divided into two general committees. Each committee was in effect the staff of the Commanding General of one of the two task groups.

One task group, commanded by General M A, had to occupy and defend an advance base for the use of the Blue fleet. This base was not held by the enemy. The other group, commanded by General M K, had to capture a base already held by the enemy and deny its use to the hostile fleet.

Each of the two committees was divided into several sub-committees. These committees prepared an estimate of the situation. They worked up a detailed description of the theatre of operations, information as to the opposing forces and their relative strength, plans open to the enemy and plans open to Blue, one student making a complete study of each plan and evaluating it. With this information before them each of the two committees then arrived at a decision and auxiliary decisions, thus completing the estimate of the situation.

Upon the completion of the estimate the students were reassigned to work on the plans and annexes thereto, including recommendations to be made by General M. to the Blue admiral regarding naval support. This completed the solution of the Marine Corps Schools which was forwarded to the War College for review.

At the conclusion of the problem each committee presented its work to the other and to officers of the post in the form of a brief description of every step leading to the estimate of the situation with a discussion illustrated by means of maps and charts. One morning was devoted to the occupation and defense of the base not held by the enemy, and one to the discussion of the capture and denial to the enemy of the base which he already occupied. Each of these phases of the problem was really a separate problem, for the theatres of operations were widely separated and presented entirely different situations. The problem was so ingeniously written that it brought to light every difficulty that would arise to make life miserable for the Commanding General of the Marine forces. There was never quite enough of anything — men, material or time. Just as the Marines grabbed a nice beach head for themselves and settled down to enjoy the war, they would be rudely awakened by the announcement that the enemy was expected pronto with a superior force to kick them out. Then they would have to scurry around and work up a defense. only to find that part of their naval support had sailed away on another mission and they must get along without it. At times the future was black, unrelieved by a single ray of hope. Defeat seemed certain. But just as everyone was becoming reconciled to the idea of spending the rest of the war in a prison camp, a way of escape would be found. In the end the "General" and his staff would discover that the task

(Continued on page 62)

PARACHUTE JUMPING

By CAPTAIN J. F. MORIARTY, U. S. M. C.
(Graduate Air Corps Technical School—Parachute Riggers)

IN "An Outline of History" Mr. H. G. Wells hints that it may be possible that man "evoluted" from Bird rather than Ape and man's attempts, during his passage down the ages, to grow wings and emulate the bird rather than develop a tail or fins, seems to lend support to this suggestion. Hand in hand with every victory over the elements, whether on the water, under the water or in the air, man has turned his attention to devices which would foil these elements when the latter became hostile and threatened him with destruction. Beginning with that ancient gentleman of mythology who fastened a pair of wax wings to the shoulders of his son and bade him "God speed," man has written a history of the successful attacks to make safe navigation of the air, and it is believed that a recitation of, or a resume of parts played by some of the principal actors in this drama, with an omission of a discussion of the scientific aspects will be of interest. This paper will be devoted to but one item making for the safety of the air-minded—the parachute—and this paper is not intended to be complete. The great majority of people are inclined to believe that the parachute is a quite recent invention and will be surprised to know that the correct principles of parachuting were offered by Leonardo da Vinci and illustrated by him in his "Codex Atlanticus" (1495), and an engraving in "Machinae Noval" called "Homo Volans" and was the first printed representation of the parachute (by Veranzio). Continuing the research, one finds the Montgolfier brothers (1783), experimenting, after a fashion, with parachutes, and these brothers reminds one of our present methods, of testing with dummies first, to make sure! They used sheep for their experiments. In 1783 Sebastian Lenormand, a Frenchman, became interested in methods of escape from tall buildings, in case of fire, and using a cone-shaped cloth parachute, fourteen feet in diameter, he jumped from an observatory tower at Montpellier. On June 3, 1785, Blanchard, having the same regard for his life as the Montgolfier brothers had for theirs, devised a silk parachute twenty feet in diameter which he released from a balloon. The passengers were animals—not Blanchard. By accident, the parachuting properties of a deflated balloon were discovered in August, 1785. Two Englishmen, Appleby and Arnold, constructed a parachute which they attached to the bottom of the balloon basket. Arnold's son occupied the balloon basket and Appleby the parachute. Upon taking off, the parachute caught on an obstruction and the balloon sailed merrily away with young Arnold. It quickly reached a height where the pressures caused the balloon to explode. The balloon's lower hemisphere collapsed internally upward, forming a natural parachute and floated slowly to earth, finally depositing young Arnold, safe and sound and very much wet, in the Thames river. This principle was discussed and actually checked by practical deliberate demonstration, by other aeronauts, particularly by John Wise, an American. The Revolutionary wars on the continent helped to expedite the construction of a practical parachute. Andre Jacques Garnerin got his ideas from balloons which the military forces used during this period. At the battle of Marchiennes, between the revolutionary forces and the Austrians and Prussians, Garnerin was captured and confined in the fortress of Buda, Hungary. He conceived of effecting his escape by means of a folding umbrella-type parachute. Before he could make the attempt he was released, and hurrying to Paris with his ideas he constructed his new type parachute. On October 22, 1797, he jumped from a balloon at a height of six thousand feet. Garnerin landed safely with his parachute at Monceau Park. According to Glassman, in his work on parachutes, Garnerin's parachute had a slower rate of descent than our service type. "It was umbrella shaped, twenty-three feet in diameter and built up of thirty-two gores of white canvas. Distended, its area was eight hundred and sixty square feet, and was believed capable of supporting two hundred and thirty pounds at a rate of descent of ten feet per second. The landing impact was said to be equivalent to a drop from twelve feet." This parachute closely approximates our own present day one, and the rate of descent is a little more than one-half the rate of our present day parachute. Garnerin contributed the idea that a parachute safely operates by the gradual escape of the air compressed in the parachute apex and this idea is incorporated in the one used today. Lalande (a French astronomer) supported Garnerin's idea regarding air escape at the top of the parachute and suggested that the oscillations of a parachute were due "to the uneven pressure on the skirt (of the parachute, of course) as atmospheric fluid spilled out of the hemisphere. Air currents were set up to relieve the strain. Hence if some air was allowed to escape through a natural vent, the oscillations should be quelled." The apex of the dome was the logical location for this outlet. There it was placed and on trial this principle was found satisfactory and continued to this day. (Glassman).

CAPT. MORIARTY AND SERGT. McFARLAND, Chief Rigger, on the steps of the home of Marshal Chang-Hsue-Liang, War Lord of Manuchuria, after demonstrating parachutes for the Marshal and his staff.

In 1837 an Irishman named Henry Cocking designed a new type of parachute built around the principle of an inverted cone. Scientists loudly vociferated that the principle was wrong and that Cocking would be killed. Both scientists and Cocking were wrong. The scientists were refuted by an American named Wise who built a parachute based on Cocking's idea and practically demonstrated that it was correct. Cocking was wrong only in estimating the material strength of his parachute. Not taking advantage of the method of experimenting with animals used by the Montgolfier brothers, Cocking was enthusiastic and confident enough to make the first jump himself—and was carried away to the cemetery. France led in the practical development of the parachute and on August 19, 1913, Adolphe Pegoud, equipped with a parachute invented by Bonnet, took off in a plane, rose to eight hundred feet. He opened his parachute and was jerked out of his plane—a rather dangerous proceeding, but he escaped uninjured. This appears to be the first parachute escape from a heavier-than-air craft, on record. The World War hastened the development of the aerial life belt and several months after the war began the Allies (and shortly followed by the Germans) equipped their balloon observers with parachutes. In July, 1918, Captain Serrat, of the French Air Force, made the first escape from an airplane under war conditions, his parachute being packed in the fuselage of his ship. Seven months before the armistice German pilots were observed escaping from burning and disabled planes and very soon the Allies captured a number of German parachutes. Parachutes saved the lives of eight hundred balloon observers and of this number seventy-six were American. Strange to say the Allies did not adopt airplane parachutes until the last few weeks of the war. The standard German parachute was the seat type, while the British used the "Guardian Angel"—carried in a metal container—both being the attached type, the release cord or container as the case determined being attached to the plane and the opening of the parachute depending upon the jumper falling faster than the plane in order to jerk the parachute open.

The chronology would not be complete without mentioning the splendid efforts of Major E. L. Hoffman, U. S. Army Air Corps, in the development of the excellent parachute with which today the Air Services are equipped. Maj. Hoffman is responsible for divorcing the world from dangerous "attached-'chute" idea to the scheme of the manually operated one. His practical methods of experiment, the ingenuity, persistence, perseverance and success were crowned when he was awarded the Collier Trophy for this work. Quoting from the Air Corps News Letter (V-5642 A.C.): "Recognizing the extreme value of the parachute as an aid to safety in flying, the committee in charge of the award of the Collier Trophy decided that Major E. L. Hoffman, Army Air Corps, now in command of the Lunken Airport, Cincinnati, O., was entitled to the 1926 award for the outstanding part he has played in the development of this important piece of aeronautical equipment. The presentation of the trophy to Major Hoffman was made by President Coolidge at the White House on February 7th in the presence of a distinguished gathering, including Secretary of War Davis, Assistant Secretary of War F. Trube Davison and Major General Mason M. Patrick, chief of Air Corps.

The Collier Trophy is awarded for the greatest achievement in aviation in America, the value of which (achievement) has been thoroughly demonstrated by actual use during the preceding year.

It was shortly after the Armistice when Major Hoffman was assigned to McCook Field, Dayton, O., as Chief of the Equipment Section of the Engineering Division, that he became engrossed in the problem of the development of the parachute, a function assigned to that particular section. Up to that time the two men on duty in the section engaged on this work had succeeded in making two parachute bodies, no harness, which they were testing from a De Haviland airplane. These parachutes and their few tools were carefully locked in one small steel chest in the corner of a hangar. It was apparent that they were receiving no support or encouragement and that the project, if unaided, would soon die of stagnation.

Having succeeded in obtaining funds for the purpose, Major Hoffman set out to build up an organization. Suitable floor space was assigned the parachute branch, and sewing machines, tools, material and other paraphernalia were obtained, including special airplanes, weights and dummies for carrying on the testing. Desirous of determining what had been done throughout the world on this problem, samples of all parachutes, foreign and domestic, that were then extant were purchased. One struggling American manufacturer (Irving) had sold the government three parachute bodies for test, little or no attention having been paid up to this time to the harness, pack, means of wearing, etc. A study and test was then begun on all then existing parachutes.

Finding that parachutes were then being tested with no more than a 50-pound weight, Major Hoffman immediately saw the fallacy of such procedure, realizing that the parachute must not only be made strong enough to hold together, carrying one man under any conditions, but that it should have reserve strength—a factor of safety. For approximation it was determined that the terminal velocity of a man falling freely would be at the rat of about 350 miles per hour. The problem then was to design a parachute that would not fail when subjected to opening when carrying two hundred pounds traveling at that velocity. Utilizing the time fuse mechanism from the nose of an artillery shell made it possible to drop the parachute and weight together for a predetermined number of seconds, when the fuse would operate a release mechanism which in turn opened the parachute. By a continuous process of modification and reinforcement, as well as venting and slowing up the inflation at high speed, a parachute body and rigging was produced which held together when opened after a free fall of sixteen (16) seconds, carrying a load of two hundred (200) pounds.

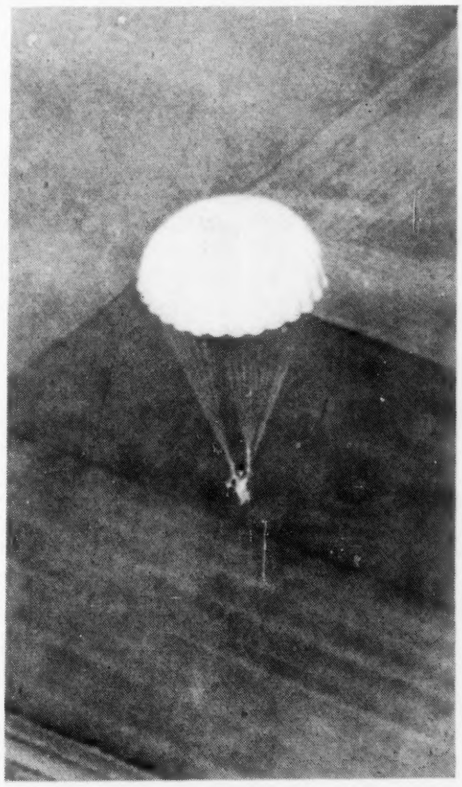
The continued use of the time fuse mechanism in all of these tests proved rather cumbersome, so Major Hoffman set about to determine what load released from a De Haviland plane flying at maximum speed would cause a strain to be set up in the parachute similar to that caused by the 16-second fall. Calculations here were not convincing because the time element through which the load was decelerated could not be accurately measured, but by comparing results on similar parachutes the conclusion was reached that a load of 400 pounds released at 120 miles per

hour would cause as great if not a little greater strain than 200 pounds at 16 seconds fall. It was now possible to arrive at the strength requirements by rather simple test dropping.

At about this time the two men originally assigned on parachute work in the Equipment Section left the service, one of them going into the business of manufacturing parachutes. In the course of further experimental work it was found that at times certain of the rigging lines of the parachute would break in test dropping, so Major Hoffman devised a mechanism for measuring and recording the shock of each individual cord during test. A great deal of work was devoted to vents, using ring vents, puckered vents, multiple vents, etc., in many different shapes and sizes. The multiple vent was Major Hoffman's own design and is still in use in some of the older parachutes in service. It was thought necessary to allow handling of large vent areas with constriction rubbers.

All along, the policy was followed of encouraging private enterprise in parachute development, the industry being kept informed of all developments as they occurred at McCook Field, and given problems to solve. Since none of them at that time had facilities for test dropping, their work consisted mostly in making up parachutes to conform to sketches submitted to them.

When the stage of parachute development reached the point where it was known how to design for the required strength, attention was directed to the pack, harness, lanyard, etc. The harness was likewise subjected to a series of strength tests and the pack, operating lanyard, etc., all assembled had to be tested to insure non-fouling, etc. After much study the **"free"** type parachute was decided upon as against the **"static"** type, for military planes at least. The free type parachute is so termed because it is carried complete in one unit, strapped to the person of the aviator, having no attachments whatever to the aircraft, and operating entirely independent of the aircraft.



CAPT. MORIARTY making his third jump. Diploma almost in sight! The Plains of Illinois 2,500 feet below.

Two years passed before it was considered that a parachute could be built for service which would prove quite reliable, and at this time an order was let for the construction of 550 parachutes, complete. As is usual with all experimental work, it was felt that the parachute department was not then ready as it would be, later on, to prescribe how parachutes were to be made. The demand for same was so insistent, however, that Major Hoffman was forced to combine the best knowledge then available and design the outfit, which was known as the Type A. Previous to this some live jumps were made with the best designs, and Major Hoffman himself made two of these to prove his contention that the device was sound.

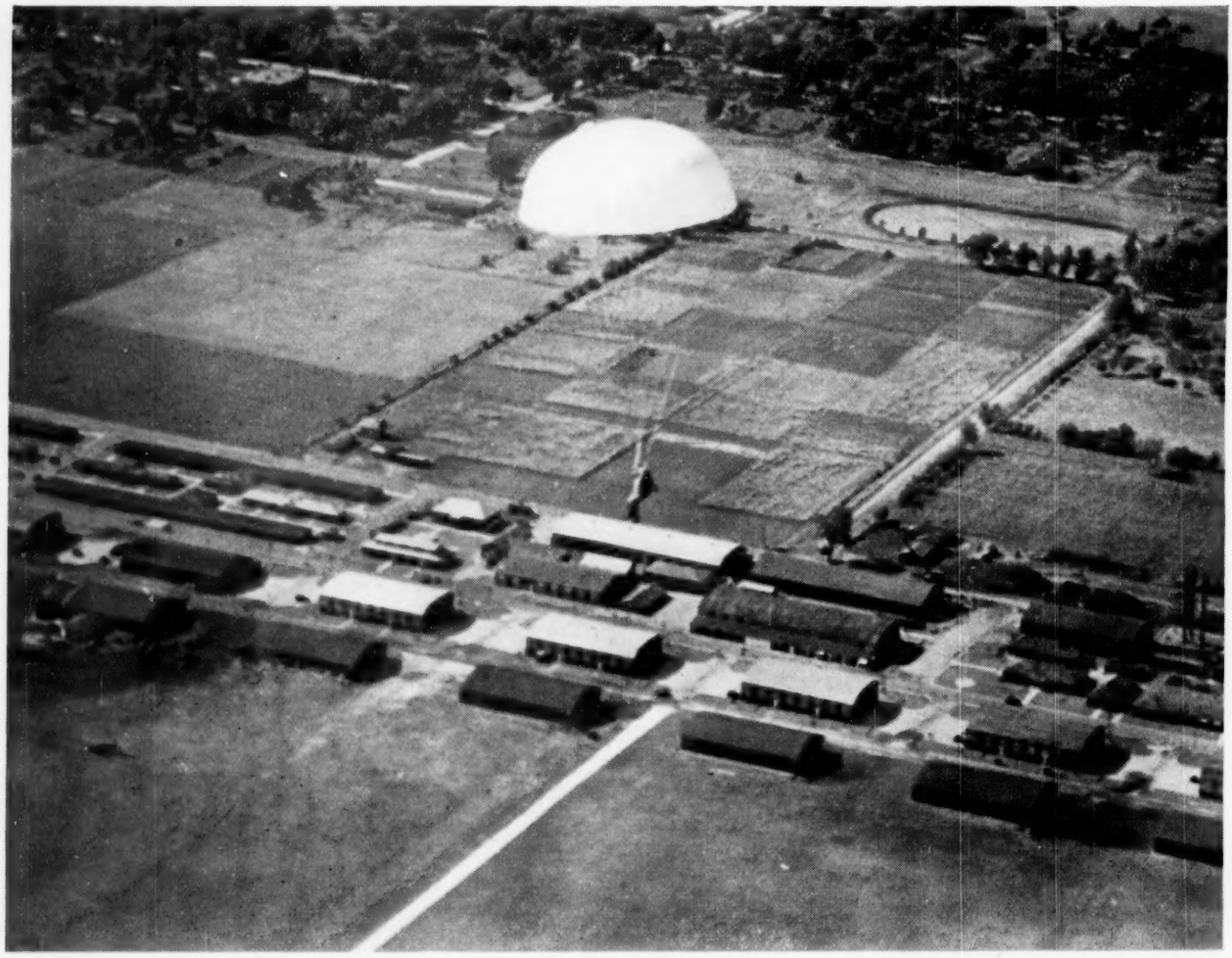
Major Hoffman drew up the specifications and made the drawings for the first parachutes ever purchased for the Air Corps, the so-called Type A, referred to above, which were in use for some time and gave **perfect service.** They were the ones in which the Air Corps learned to jump, over 1,000 live premeditated jumps being made with them. He also designed the vent operating mechanism, re-enforcing cordage, and Dee Rings. During the years in which these experiments were carried on he was actually on the field, up in the testing planes or in the laboratory studying the many varied problems before him, making drawings or parts. Sometime later he succeeded in having one of his original assistants, Mr. Guy Ball, return to take charge of the work, and the latter has contributed many valuable ideas and continued the parachute development work.

The successful operation of the parachute led the commanding officer of McCook Field to issue orders making it compulsory to wear parachutes in all test flying. Shortly thereafter the Chief of the Air Corps issued orders making it mandatory for all personnel to carry parachutes during flights.

While the development work was progressing Major Hoffman conceived the idea of obtaining slow motion pictures of the opening of the 'chutes. These pictures proved invaluable in subsequent work.

For a time it was believed that the strength test was about all there was to the parachute problem, it being felt that any orthodox parachute would open if exposed to the air. The death of Sergt. Washburn during a practice parachute jump, caused by the failure of the two 'chutes he carried to open, caused a rude awakening to the fact that it was not a certainty that a parachute would always open properly. It took nearly a year of intensive study, testing and experimenting to solve this problem. It was inherent in the design of the mouth of the 'chute. After correcting the design of 'chutes to insure certainty of openings, Major Hoffman reasoned that in testing them we should aggravate the conditions of opening, and out of this came the requirement in the specifications for testing with three twists in the shroud lines.

Experiment with different mouth designs to insure certainty of opening also gave Major Hoffman the thought that a parachute could be constructed which would open even if the mouth were held shut. He detailed one of his men to work this out after giving him the basic ideas. This development was carried out in the post swimming pool, much to the disturbance of the post surgeon, by using the pool as a



ALMOST DOWN!—Capt Moriarty, U. S. M. C. landing on the flying field at Chanute Field, Pontoul. Ill., This photo is one made during the first jump—the actual leaving the ship is shown in the first photo.

"towing basin" in which the parachutes were inflated under water. This arrangement was patented by the man who worked it out, and it is felt that this principle will be generally used in the future.

To the above report may be added a few interesting episodes of the many which occurred during the experimenting stage. When the Parachute Section under Major Hoffman was investigating the various kinds of parachutes then in practical use throughout the world, Lieut. R. A. Caldwell, Royal Flying Corps, made a live jump at McCook Field with a British "Guardian Angel" (attached type) parachute. The life line fouled the rocker arm on the De Haviland plane from which Lieut. Caldwell jumped and the latter was killed. Up to that time much speculation was given to man's ability to plunge downward a great distance and maintain consciousness and control of his movements. Lieut. Caldwell, in falling, was noted in continuous struggle to attempt to save himself and on strength of this observation Leslie Irvin (then a member of the section, now the manufacturer of the famous Irvin Parachute) volunteered to "break the ice" and make a deliberate jump with the "free" type, believing that he could maintain consciousness and freedom of action sufficient to pull the rip cord and open his parachute. Using a parachute which he built himself and a harness of his own design (the 'chute was made of Habutai silk weighing 1.6 ounces per square yard having a sail of 40 panels, 40 braided silk shroud lines each with a breaking strength, tensile, of 250 pounds and an elastic vent 40 inches in diameter), Irvin made the first "free" jump, pulled his rip cord and landed safely proving for all time that falling through space does NOT cause a human being to lose consciousness or control of his actions. Following Irvin's daring jump Major Hoffman and the Parachute Section made free jumps to install public confidence in their new life belt. The last word in safety with the assistance of parachutes (at this writing) took place on August 24, 1927, at El Segundo, Calif. A plane and pilot were landed safely with the sole assistance of a parachute, fifty feet in diameter, designed by Mr. Harry D. Doucett. The rate of descent was thirty-eight feet per second and the only damage sustained by the plane was a broken landing gear.

No attempt will be made in this article to discuss the technical details of the parachute nor will any attempt be made to describe other than the one now

(Continued on page 77)

The Line Company, a Marine Orphan

By CAPTAIN MAURICE G. HOLMES, U. S. M. C.

I BELIEVE that the time has come when the Marine Corps should take stock of the functioning of its line and auxiliary elements and readjust their relative weight.

"The 11th Regiment has a happy and an efficient lot of officers because they were an outstanding class to begin with. The larger portion of them had to be taken from special duty jobs when the outfit was ordered back to active duty."

I have quoted the expression of a captain of that regiment in conversation on our situation in Nicaragua in 1928. The longer I pondered his meaning the more astonished I became, for he meant simply that our best commissioned personnel had not been sticking to the line organizations; that, whatever the reasons, the better type of officer had sought specialized details while ashore in the United States.

It strikes me that the Marine Corps, of all organizations, is, by nature of the active field service required of it through the long years between national emergencies, the one branch of the federal defense which should stress efficiency of line combat units if we grant—as do the Navy and the Army—that our entire structure is designed to insure success in actual combat. I am told that we adopted the designation of companies by numbers specifically to give each company a distinct individuality and to make it our fundamental tactical and administrative unit, because it was believed at the time that we would never be able to maintain permanent battalions and regiments. The company, then, obviously was intended to be our prime element for combat functions.

THE MARINE
From an Etching by Capt. John W. Thomason, Jr.

It would accordingly seem that our most capable company officers would desire duty in the companies. Is it not normal that every ambitious officer should desire duty with our most important elements? Have we not heard many of the older officers of the Corps say that their most gratifying periods of service were those of company commander?

It appears now, however, that the job of company commander is not considered the most gratifying duty; at any rate, not in the United States. I hear it said generally, also, that it is most difficult to obtain capable non-commissioned officers for line companies, which leads one to think that even the men find little that is gratifying therein. If the line is to be the element of greatest importance to us, certainly it must follow that we should so administer it—even at home in peace—that our most capable personnel, both commissioned and enlisted, would be attracted to it.

As far as the enlisted men are concerned, duty with troops has too little to offer the ambitious soldier. The company in training by snatches, between long periods of general police and guard, has little attraction for men in general in this day of mechanization compared with the lure of tanks, trucks, motor cycles, tractors, and artillery pieces; lathes, electrical workshops, and garages. Even the type who would like to soldier for the sake of a military career feels that he cannot get anywhere in the company; and in all, there results a constant turnover as the men seek jobs which develop skill in civilian trades and offer opportunities for more pay and quicker advancement.

There are few specialists carried by the line company and there are few grades for advancement in pay. Since 1917 only one grade, private first class, has been added to the company, while in the same period our auxiliaries and staffs have been allotted the grades of master technical sergeant and paymaster sergeant in the first pay grade; supply sergeant and staff sergeant in the second and third pay grades respectively.

Even the highest ranking non-com in the line company is only a second pay-grade man. It is unnecessary to suggest the importance of the first sergeant because every one knows he can affect the company's efficiency tremendously. Does the situation with respect to that grade attract to it our most capable enlisted personnel? Any careful observor realizes that it does not. We find in Headquarters Bulletin No. 35 of 15 August, 1928, the following:

"Commanding officers are urged to consider all sergeants under their command for promotion to first sergeant as there is a dearth of real first sergeant material."

I suggest that the gunnery sergeants under their

command should have been the ones to be considered for promotion. There were gunnery sergeants assigned to the companies then and I believe such an assignment has been and will always be a decided benefit to the company. At the same time, few gunnery sergeants desire promotion to first sergeant because it means merely more work and more responsibility for the same pay.

In Headquarters Bulletin No. 32 of 15 May, 1928, we find:

"There has been a noticeable tendency since the World War to give undue weight to the clerical qualifications of appointments to this grade, oftentimes at the expense of leadership. The board believes this condition is detrimental to efficiency and that the pre-war characteristics of our first sergeants should be restored."

I am certain that there isn't a captain in the Marine Corps who does not subscribe most heartily to that quotation. How can we best develop the quality of leadership we desire in the first sergeant? Experience suggests that we promote only those who have already served efficiently as gunnery sergeant.

Let us assume that we keep the gunnery sergeant in the company. Obviously we wouldn't reduce his pay to give the first sergeant a leg-up, so it would remain to give the first sergeant an increase in pay. I fail utterly to see why he should not have the pay of the first pay grade. I cannot recall at present any division on board ship which does not have at least one chief petty officer allotted to it, including the deck divisions whose particular duties are more closely like those of the Marine Detachment than those of any other divisions. In fact, the 5-inch gun divisions are identical with ours in the fight at sea. It is well known to the vast majority of Marine officers that few chief petty officers have to exercise the tact, the attention to numerous details, or exert the quality of troop leading required aboard ship of our first sergeant who, withal, receives just the same pay as officers' cooks, first class. Of course, it is understood that the Navy carries the larger number of first pay grade men because they require highly-skilled technical men, yet we find our men performing duties closely parallel and in some cases identical with theirs on the ships where we serve.

I believe also that we, a part of the Naval Service, should approximate our rank and pay with theirs rather than with the Army. In our rank of gunnery sergeant we have departed from the Army grading anyway, and I believe that was a step in the right direction. As far as the service of the average Marine is concerned, there is hardly any comparison between what he has to do and the duty required of the Army enlisted man. True enough, we carry out the bulk of the duties of their infantry, but the manner of application is so radically different as almost entirely to eliminate the analogy between the two services. Our rapid rotation through sea, home, and foreign service stands out as sharply as black to white against the Army man's fixation in one company, one regiment, one post; and I have yet to hear of any day-on-and-day-off guard duty for the Army. The normal function of our Corps is unique because the doctrine of no single arm nor branch can guide us; no Marine may be simply an infantryman or an artilleryman as in the Army; neither a fireman nor a gunner's mate as in the Navy. I suggest, therefore, that we quit attempting to apply literally the organizations of other arms to the Marine Corps but establish our own organization in accord with our particular needs. If it should be urged that special ranks and rates of pay for us were unjust discrimination against the Army, we could maintain stoutly that we were not paying our men for Army duty. Certainly we would never catch up with our especial needs if we merely adopted such innovations as they might introduce into their own service, as, for example, their recent increase in the ration allowance—a benefit we would have missed for about the last ten years if we had not shifted from the Army to the Navy ration.

In addition to increasing the pay of the first sergeant and retaining the gunnery sergeant in the platoon, I suggest that we add a sergeant grade with the pay of staff sergeant and the title of "section sergeant," or an equally expressive term, for the duty of section leader in the rifle platoon and its corresponding combat units. One has only to read the duties of the section leader as specified in Training Regulations 145-5 and 420-110 and as amplified in our schools to realize the responsibilities which have devolved upon that post since the World War; combat functions and obligations little if any short of those assigned the second lieutenant prior to the War. The section leader is responsible for the functioning in combat of one-fourth the rifle company, or more in case the section be reinforced by special weapons. He must exercise initiative at all times; he must have finely balanced judgment for individual decisions; and he must rely on his own means to accomplish his missions as long as it be physically possible to carry on. Before he gets into action, he must have become proficient in the mechanics, functioning, and use of all the weapons of the section; he must have trained his section in all details of fitness for combat—all of us are aware of the trades of which he must be Jack in addition to combat training. One cannot but wonder why we expect to get so much from one man for $54.00 a month, the pay of a Navy mess attendant, first class. It may be granted that in time of national war we shall have in the non-commissioned ranks many men who are actually fit material for commissions. On the other hand, history shows gaps as large as 33 and 18 years between wars in the last century; almost 12 years have elapsed since the World War. The prestige we earned in the Spanish-American War and the World War has been sustained by Vera Cruz, Haiti and Santo Domingo, after the one, and Nicaragua and China after the other. Like the golf champion we have to keep on shooting par or better to remain in the lead. We cannot stay at the top without top-notch leaders and we will not get the top-notch leader material in line companies unless such companies offer men as fair a break in advancement and pay as the auxiliary and staff elements offer them.

In order to increase the rate of promotion and to provide the highest type second leader in the section, I suggest that these ranks of section sergeant be added to the normal quota of sergeants in the company thus affording sergeants, as second leaders, in place of corporals as provided at present in Training Regulations, although omitted from our peace strength organization tables. Our "small wars" show countless cases where non-commissioned officers of rank

(Continued on page 44)

The Use of Gas in Minor Warfare

By MAJOR PEDRO A. DEL VALLE, U. S. M. C.

IT is just as well to state one's purpose in the beginning. The reader, if interested, may then look at the picture from the same angle as the writer. It is the purpose of this article to advance the cause of chemical warfare, with reference to its employment by the Corps in its perennial, tropical small-wars in the bush.

Some of the matters involved in chemical warfare are, perforce, confidential. They should not be divulged indiscriminately. This fact has led to a general "hush-hush" which serves as often to disguise ignorance as to conceal any dangerous knowledge on the part of the husher. Some plain facts may be employed to show that no one need profess such excessive caution, bogus, or otherwise, in the discussion of this subject.

First we have the fact that no treaty now extant legally prohibits the use of chemical warefare. Prior to the World War there were certain restrictions. Following the World War there were many well intended condemnations of its use, and treaties were drawn up to provide that in amicable wars between ladylike combatants of an enlightened sort, there would be no such horseplay—heaven forbid! In the final analysis, in spite of the Pan American Conferences which "resolved" that this chemical warfare is a nasty business and should never be used "in war", and the final words framed at Geneva looking towards its discontinuation, we still have the fact that the United States is bound by no treaty restricting its activities in this direction. Other nations being in the same status, it thus became right and proper for all nations to indulge in the researches and preparations necessary to their national safety, in the field of chemical warfare. Thus you see that we have the law on our side, at least tacitly.

Second comes the fact that it is neither more nor less humane to kill by asphyxiation than by any other means. What if asphyxiants, vesicants, lachrymators, and sternutators **are** nasty things to become intimate with? Who has ever written an eulogy on the pleasures of being horribly mutilated by a shell fragment, or gutted by a bayonet? Yet none throw up their hands in horror over these older implements of death. In the field of ethics they stand unquestioned. They are accepted as "civilized". But the truth of the matter is that they cause equal, if not greater, actual suffering to the victims. Unquestionably we must readjust the ethics, since they are hopelessly illogical, especially in view of the after-effects of gas compared to other weapons. Here are the unquestionable facts resulting from an exhaustive study of World War casualties: "A comparative study of cases covering practically all the casualties resulting from the World War reveals that less than 5 per cent of the casualties caused by gas died, whereas over 30 per cent died who were casualties caused by other weapons." That is a report worthy of study. It covers a period of ten years and applies to the wounded of all nations that took part in the war. It further states authoritatively that practically no persistent ill-effects were produced by gas. When a man was well he was well. How many unfortunates

(Continued on page 49)

NICARAGUAN INSURRECTOS BEHIND A HOME-MADE "TANK"
(Sketched by Capt. John W. Thomason, Jr.)

"Nor By Sword Alone"

By FIRST LIEUT. C. D. BAYLIS, U.S.M.C.

THE SIGNING of the Armistice, November 11, 1918, set in motion the tolling of an "Angelus," heard by all the people of the earth, that they might give thanks, thought, and prayer—to the dawning of a new and happier day.

From the Argonne to the Pacific, men under arms, serving every flag, looked forward in happy anticipation to the day when they might return to their homes.

Since that memorable day the Army, Navy, and Marine Corps of the United States of America have carried on their regular routine of preparedness to meet any emergency.

The regular armed forces of the United States were returned home from overseas approximately two years after the signing of the Armistice. Although the armies of the world had never before experienced such a conflict, to the regulars the war had to be looked on as an incident to service. Lessons were learned from the World War, and all plans for future training were formulated from them.

The United States Marines expanded to four times their peacetime strength during the war, but they were the first to recede to peacetime strength. Throughout the Marine Corps conditions soon returned to normal, and the old-established posts and stations resumed their pre-war routine.

While the delegates of the nations were assembled, seeking some solution to the peace-and-disarmament problem, fate decreed that conditions would arise making obligatory a call on the United States Marines to protect the lives and property of American citizens. First the trouble in Haiti, in 1919, called for additional marines to adjust matters there. In 1927, conditions in Nicaragua and China became such that it was deemed advisable to send marines to both places, where they have been ever since, although somewhat reduced in numbers.

After the crisis which called for the presence of marines had passed, prior to their withdrawal, they endeavored to establish friendly relations with the inhabitants. Familiar as he is with the habits and customs of the peoples of many lands, it is not a very hard job for the marine quickly to adjust himself to his surroundings.

In many instances on these expeditions it has become necessary for the marines to resort to the use of arms to repel the hostile attacks, and in many instances extensive operations have been carried on.

United States Marines have served ashore on Expeditionary Service in China, Korea, Cuba, Panama, Santo Domingo, Haiti, Nicaragua, the Philippines, Mexico, Guam, Samoa, and elsewhere, on many occasions.

Marines as "Missionaries"

In every country in which they have served, marines have finally secured the confidence and esteem of the inhabitants. As soon as conditions return to normal, the marines settle down to routine. They work hard, but play equally as hard. There is no sport in the world better suited to the tropics (where United States Marines have served so often) than baseball. It seems to be a part of a marine's expeditionary equipment—baseballs and bats. As soon as the inhabitants of an occupied country see the marines taking to their sports, they are quick to gather as spectators. In this way friendly relations are established. Languages are learned from the questions asked about sports. The people are quick to learn baseball and, before long they, too, organize baseball teams, are coached in many instances by marines, and become quite proficient at the game.

The Scots Guards Memento

Not alone in sport have United States Marines served the people of an occupied country. In Guam the present school system was established by a marine, and for years all the teachers were enlisted members of the corps. Marines have also acted as public officials in the capacity in which they might better serve humanity.

Marines organized, have instructed, and served as officers, in the "Guardia Nacional" of Santo Domingo, "Garde d'Haiti," and the "Guardia Nacional" of Nicaragua.

Marines have been ashore in China since 1900, when they marched to the relief of Peking with the Allied Troops. Since that time they have served continuously ashore in Peking, and at other times have served on expeditionary service in other parts of China. In 1927 marines were landed at Tientsin, to stay until January, 1929. They have been ashore in Shanghai from 1929 to date. At the present time the Fourth Marines, commanded by Colonel Richard S. Hooker, U.S.M.C., number 59 officers and 1,200 enlisted men ashore in Shanghai,

French Colonial Troops During Ceremonies Incident to the Departure of Colonel Lyman From Shanghai

Twenty-Eighth Machine Gun Company, Fourth Marines

First Battalion, Fourth Marines, Passing in Review at the Race Course, Shanghai

billeted within the International Settlement.

Relations With the British

During the march to the relief of Peking in 1900, United States Marines were a part of the Allied Army that first occupied Tientsin and then marched overland to the beleagured city. At that time they became fast friends with British troops, and ties were established that have endured to this day. Particularly of note is the friendship with the Royal Welch Fusiliers, and in this connection it is interesting to note that this year, the 30th anniversary of the march to Peking, tokens were exchanged between the United States Marines and the Welch.

Tokens Presented to the Fourth Marines by Units of the Shanghai Defense Force. Left to right: Scots Guards Memento, Plaque of the American Troop and Company, Shanghai Volunteer Corps; the General Duncan Trophy; the Shanghai Volunteer Corps Plaque; the Wiltshires' Token.

As soon as conditions became normal, after the occupation of Shanghai in 1929 by the Allied Defense Forces, the United States Marines engaged in athletic competition with the British Forces. They have had many spirited athletic contests, acquaintances have been formed, and a spirit of comradeship has been established. It is a common sight to see the United States Marines and members of the British Defense Forces attending moving pictures together; they entertain each other in their billets, and in their mess. In some instances they have paraded together. Visits between the unit commanders have been exchanged and many parades of honour rendered the ranking officers.

The units of the British Forces best known to the United States Marines are the Welch Fusiliers, the Green Howards, Scots Guards, the Wiltshire Regiment, the Suffolk Regiment, the Norfolk Regiment, the Worcestershire Regiment, the Northhamptonshire Regiment, and the Shanghai Volunteer Corps.

As the reduction of the British Forces in Shanghai was effected, there were many instances of exchanges of tokens of esteem between them and the United States Marines, the most prominent of which are named below:

The Plaque of the Green Howards

The flag and standards holder in the office of the Commanding Officer of the Fourth Marines is fronted with a silver plaque on which is inscribed: "Presented to the 4th Regiment, U. S. Marine Corps, by 1st Battalion, The Green Howards—to Commemorate their service together in Shanghai, 1927."

The Scots Guard Memento

The beautiful silver statue of a Scots Guard Drummer, was presented to the Fourth Marines, by the departing Scots Guards, and bears this inscription: "Presented to the Fourth Regiment, United States Marine Corps, by the Second Battalion, Scots Guards, Shanghai, 1928."

American Volunteers' Plaque

A handsome silver plaque was presented to the Fessenden Fifes, an organization of fifers and drummers of the Fourth Marines, by the American Troop and the American Company of the Shanghai Volunteer Corps. It bears this inscription: "Presented to the Fourth Regiment, United States Marine Corps, in Commemoration of their service together in Shanghai, China, 1927." "The Green Howards made it possible for them to play them." The Green Howards acted as instructors for the Fessenden Fifes when they first secured the fifes and drums from the Shanghai Volunteer Corps.

The General Duncan Trophy

Another handsome memento presented to the Fourth Marines bears this inscription: "Presented to the Fourth Regiment, U. S. Marine Corps, by Major General J. Duncan, Commanding British Shanghai Defence Force. As a memento of our friendly cooperation in Shanghai, 1927-1928."

Shanghai Volunteer Corps Plaque

A recent memento presented to the Fourth Marines was a plaque from the Shanghai Volunteer Corps, 4th, April, 1854. "Presented to officers of the Fourth Marines, by the officers of the S. V. C., as a memento of service together in Shanghai, 31st of March, 1930."

The Wiltshires' Token

When the Wiltshire Regiment left Shanghai, last February, they gave the Fourth Marines a beautiful silver cup bearing this inscription: "Presented to the Fourth Marines, by the 3rd Battalion, Wiltshire Regiment, Commemorating friendly relations in China, 1929-1930."

(Continued on page 63)

Bull Cart Transportation in the Tropics

By MAJOR ROGER W. PEARD, U. S. M. C.

BULL CART transportation, while probably the least romantic subject with which a soldier has to deal, is nevertheless important. Ignorance of it may well cause serious lose of time and money, as well as actual hardship to troops in the field, who are dependent upon this class of transportation for rations and supplies.

Under stabilized conditions, through friendly country where enemy or bandit forces will not be encountered, bull cart hauling may be done by responsible contractors, who are paid when cargoes are delivered intact at their proper destination, and who are checked for losses of cargo enroute. Under such a system, the military guard of the train, if any, is only concerned with assisting the contractor to deliver his cargo and to help him prevent looting. However, such ideal conditions are all too infrequent, and no remarks in the following discussion will be understood as applying to such contract hauling, but will deal solely with bull cart trains convoyed through hostile or unfriendly country, by military or naval troops.

The absence of official data or instructions concerning the handling of bull cart trains and their cargoes, leaves the average officer entirely on his own when suddenly confronted by the necessity of utilizing bull carts for the transportation of supplies etc., and finds himself responsible for their proper loading, despatch, and safe arrival at the required destination.

This problem was brought home to many Marine officers in a very forcible manner during recent operations in Nicaragua in 1927-28 and 29, where road conditions prohibited the use of any but bull cart and pack transportation. Officers, who had never been called upon to use bull carts throughout fifteen to twenty years of distinguished service, suddenly found themselves, on a few hours notice, ordered to distant points, through bandit-infested country, in command of a large bull cart train and troop convoy, the safe arrival of which meant almost life and death to the troops operating in the field, and a failure to properly handle such train laid such officer open to serious official criticism for military inefficiency. Cargoes of such trains often included rations, medical supplies and all classes of ammunition and ordnance.

The trails (erroneously called roads) to be traversed, varied from mile after mile of knee deep gumbo mud, to a series of rocky, mountain trails, the latter interspersed with muddy, almost impassable valleys, with a liberal number of large rivers to ford at most inconvenient times and places.

On long hauls, it was found that there was little to choose between the muddy plains and the mountain trails; the former quickly softening the oxen's hoofs, causing tender feet, while the latter wore the hoofs down to the quick and the same result was reached. Spare oxen with the train are of course the only answer to this problem.

There are certain general rules concerning the loading and handling of bull carts which can best be learned by experience, but which, if followed by an inexperienced train commander, will greatly lessen his difficulties.

In assigning loads to individual carts, remember that two thousand pounds is a maximum load for one cart, with two yoke of oxen. If the going is particularly bad, from 1,200 to 1,600 is sufficient load. This is for long hauls of fifty miles or more. A load of over 2,000 pounds is dangerous, regardless of road conditions or number of oxen per cart, as it is too great a strain on the cart and will cause break-downs which are almost impossible to repair on the trail. When such break-downs occur, either secure new carts in the immediate vicinity of the break-down, or distribute the load of the broken cart among your remaining carts. If neither of these makeshifts is possible, discard sufficient of your least valuable cargo, re-arranging loads of carts to carry all valuable or important cargo.

The weight of all military ordnance, ammunition, and supplies can be estimated, and ration containers usually are accurately marked with gross weight. Thus proper loads can be assigned to all carts. When streams are to be crossed, load carts so that the top layer only contains perishable cargo, such as sacked sugar and flour, thus preventing or lessening losses by wetting when carts ford streams loaded. It is better to arrive safely with all carts, cargo and oxen in good condition, than to gamble on overloads, with their resultant delays, broken cargo and injured oxen.

Whenever possible, secure or appoint a chief bull cart driver (Jefe des Carreteros), and, unless the road is well known, a reliable native guide (Guia); the former should be one in whom the other native drivers have confidence, and through whom you can issue general instructions.

In loading carts, let the native cart driver distribute and lash his load AS HE SEES FIT, as no amount of higher college education will give you the practical knowledge on this subject that an apparently ignorant native driver will have. However, DO NOT let this native driver tell you when he has a sufficiently large load, as they will all start off with as light a load as possible; give him his share of the cargo and such assistance as he needs in loading it, but let him load it to suit himself. You will find that he will balance his load, with a slight excess weight to the front to prevent the tongue from riding upwards when under way, by balancing the cart load and testing it before the oxen are hitched to it, and by lifting the tongue level, to estimate the strain on the oxen when attached to the cart.

On the first day's march, note carefully which are the best carts for speed and which drivers handle their carts the best. This can be done by personel observation and by careful spotting of carts that are slow, and most frequently cause delays. In the morning of the second day, or earlier if it can be done without undue delay or confusion, place your poor carts at the HEAD of the train, leaving the best carts in the rear. This will assure the closed-up march of your

column and prevent the stringing out of the carts over many miles of road space, thus making your supervision, protection and control of the train much less difficult. When the train consists of so many carts that a mental list of the drivers is difficult, number the carts with painted numerals before departure, and make a written list of each cart by number, its driver by name, and owner.

By halting the head of the column for a short rest period every hour, the closed-up progress of the train can be assured.

By having a few mounted officers or NCOs, much time can be saved in checking up and clearing delays in the train. If all trouble has to be cleared on foot, needless delay results and the physical strain of struggling through the mud on foot, to check up on accidents and hold-ups in the line, can be avoided.

If the location of the next camp for the night is known, or if you have a competent officer or NCO who is qualified to pick such a camp site, send him ahead after the noon meal with enough of your best carts to carry all kitchen equipment, rations for the evening meal, and other articles necessary to make camp for the night; let your galley force, a small working detail, and an adequate guard accompany these special carts, which will then precede your main body to the camp site, have camp partially made, the galley going, supper under way, and hot coffee awaiting your main body upon arrival.

When security permits, too much emphasis cannot be given the advisability of maintaining large bonfires in or around your camp, from dark until daylight; these fires raise the morale of your men, assist them to dry themselves and their clothes, and if properly located, actually assist them in case of attack, providing of course your sentry posts are not established too close to the fires. Early in the evening, a wood detail can bring in sufficient fuel for the entire night, and a member of the guard can replenish the fires as needed, during the night. In case of sniping by the enemy, fires can be put out immediately with water from the galley. In case of actual attack, place your men under cover and let the attackers come through the fire light, where they will make most excellent targets.

Camp guards, details for carrying wood and water, latrine construction, and all other routine camp work, should be assigned in advance, alternating between various units of your command. Thus, when a new camp is reached, every man knows his job and camp can be made with the least delay and confusion. On trips of several days' duration, this essential and the larger your command the more important it is.

Native cart drivers normally feed themselves on native rations carried from home or procured enroute, but when traversing sparsely settled or unfriendly country, military necessity may demand the feeding of native labor from your regular ration supply, at least in part. You will receive full credit for rations so expended on your ration return, if actual military necessity for such expenditure exists. Your men must keep a careful watch on cargo to prevent native drivers from breaking containers and consuming unauthorized rations enroute and in camp. In camp, carts should be arranged in a park convenient for guarding, and the next day's departure, otherwise you will find the carts strung out all over the landscape.

Unless a previous agreement to the contrary has been made, natives are responsible for feeding their oxen and pack animals at their own expense. You may occasionally have to advance them small sums for payment of pasturage, in order that unpaid bills will not be left behind; but be sure to keep an accurate account of such advances and deduct them later from their pay. It is well to assure yourself that all such bills are paid before clearing camp, as your drivers often attempt to impose on local civilians, who are intimidated by your display of arms. Usually such local civilians will report to you before your departure from any locality, the fact that pasturage, etc., has not been paid for.

Stream Crossings

Tropical streams, particularly in the rainy season, constitute serious hazards to cargo, oxen and personnel. Frequently such streams will not be wide, but deep and with strong currents. The approaches usually are very steep. Never attempt to enter such a stream with more than one yoke of oxen to each cart. Attach a line to the rear of each cart before it starts down the incline, ease it down to the stream bed by man power on this line, using the two oxen merely to start the cart and guide it.

When the stream bed is safely reached, attach the same line to the front of the cart and by man power on this line from the opposite shore assist the oxen to haul the cart across. When your departure on the far side is steep and four to six oxen cannot haul the cart out, man power on the head line and wheels of the cart, will always assist the oxen sufficiently to bring the cart out. In relaying extra oxen for the purpose of assisting carts out of bad places, be sure to change these spare oxen frequently, as using the same spare oxen indefinitely for this purpose, no matter how good they are, is too much of a physical strain.

When the stream is deeper than the height of the cart bottom, it may be necessary to unload all carts, extend strong lines from short to shore, float the empty carts across, swim the oxen and personnel, then shift the cargo across piece by piece by lines and personnel, using the originally strung lines for safety. This is a slow proceeding, and it is not unusual for an entire day to be consumed in one such crossing of a large bull cart train.

Tropical streams in the rainy season rise and fall with great rapidity, depending on the rainfall higher upstream. By waiting a few hours on the near side, an easy passage may often be effected when the stream goes down, and considerable work and danger thus avoided. The train commander's judgment as to weather conditions will govern this decision, as there is also the chance that the stream may rise still higher if the crossing is not at once effected. Previous high water marks along the banks and the general appearance of the weather upstream, will assist you in deciding when the best time to cross has arrived. Also, your mission and the required date of your arrival must always be kept in mind when such decisions are to be made.

Discipline

Under such road conditions, the physical and mental strain on your foot troops composing the guard of your train is considerable. Due allowances

(Continued on page 47)

THE TAKING OF FORT RIVIERE

By MAJOR THOMAS E. THRASHER, JR.
U. S. M. C.

IN telling of the battle at Fort Riviere, I must warn you of two things: First, I am telling it solely from memory and doubtless have forgotten many of the details, and second, this account is not for the purpose of exposing either correct or erroneous methods of procedure in small wars. I took part in this battle, and it was small enough so that I saw the entire battlefield; but a few years have passed since it happened, so some of the sad, amusing or instructive incidents of the episode will be lacking.

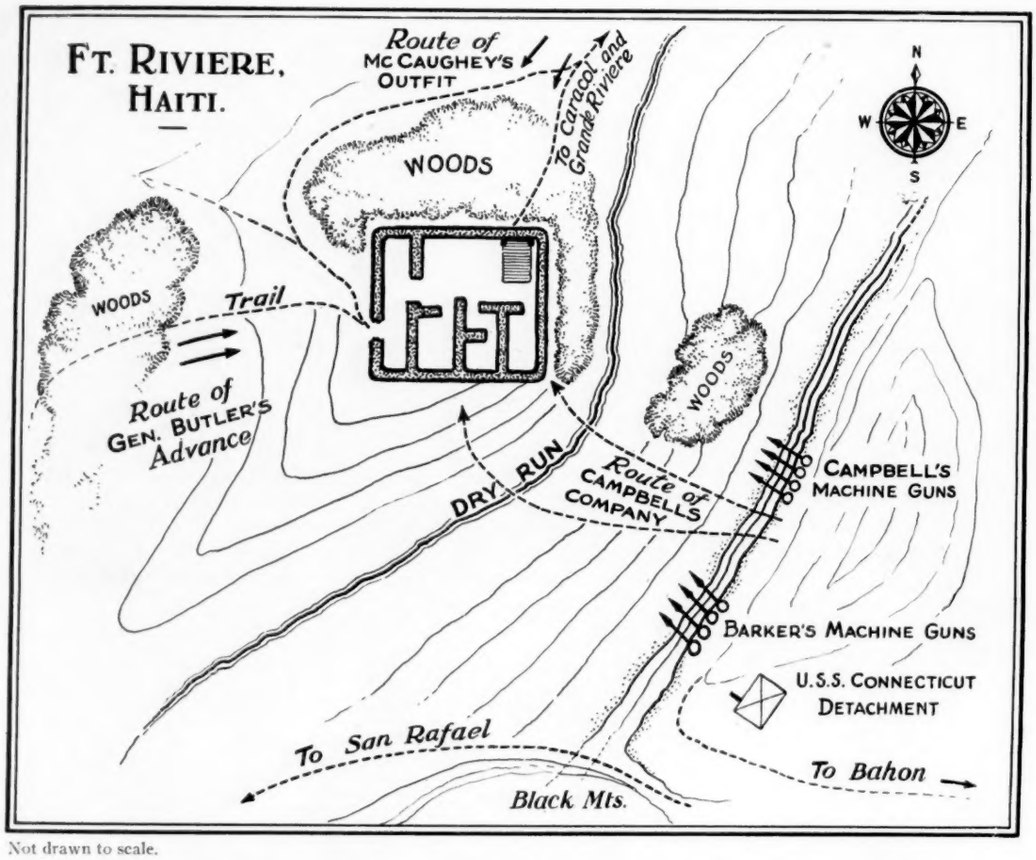
Fort Riviere was built by the French, sometime before 1800, probably by that part of Napoleon's army commanded by Captain-General LeClerc, who married Pauline, Napoleon's sister, and who maintained his headquarters in Cap Francois. It is southeast of the Citadel of La Ferriere and some ten or twelve miles further inland. After the Haitiens declared their independence and "King" Henry Christophe built the Citadel, the Haitiens must have used old Ft. Riviere, along with Ft. Capois and Camp Berthol, in their chain of communications between Ft. Liberty and Cape Haitien. If an enemy approached by sea, a smoke signal on the mountain guarding the entrance to Cape Haitien Bay could be seen by Christophe's troops on the Citadel, who could in turn signal Ft. Riviere, and so on around the circle to Ft. Liberty, and thus summon the forces to meet the invader. On a clear day the small old fort on the outskirts of the town of Grand Riviere, about eight miles north of Ft. Riviere, may also be seen, but the peaks of the Black Mountains, just east of Ft. Riviere, mask the view of Bahon, five miles away. Clouds and fogs often fill the valleys so that on looking out from this mountain stronghold there appears nothing more than the tops of the surrounding mountains, giving the impression of islands in a foamy sea. The marines who landed in Cape Haitien in 1915 could plainly see that vast fortress, the Citadel, which cost Christophe 30,000 lives to build, away to the south, but they never suspected the existence of Ft. Riviere; for that old French fort, deeper south in the mountains, had stood overgrown and unused for over a century, until it became a Caco stronghold.

Fort Riviere is built of rock with loop-holed masonry walls, several feet thick. There is no roof overhead, or if there ever was one, it has long since disappeared. It is about square with each side wall over one hundred feet long. Thick brush, vines and trees almost hide the north wall from view, and the original arched entrance, near the northeast corner, was blocked up with dirt years ago. Old trees, taller than the archway, are growing in the trail. From the top of the north wall it is thirty or forty feet to the ground below. The east and south walls

Just After the Fort Was Taken

are from fifteen to twenty-five feet higher than the ground outside. The west wall, near its center, is but little higher than a man's head, but the ground slopes away toward each end where the walls reach a height of over fifteen feet. Because it was less work, I suppose, to break through the west wall at its lowest point, the Cacos had knocked out the masonry there and thus made the only entrance to the fort. The gap is too narrow for two men to go through abreast, and its edges are sharp rocks. Partition walls, some as high as the outside walls, divide the interior into rooms; these walls are stone and in many places have tumbled down. The floors are all earth covered with high grass and bushes; perhaps in the days when the fort was new it had a paved rock floor and may have had underground chambers and magazines; a deep, completely overgrown hole toward the northwest corner, and numerous loose stones, bear out this suspicion. The sketch, photographs, and map, which accompany this article, will give a clearer picture of Ft. Riviere than my description.

In 1915 the Marines had chased the Cacos all over Northern Haiti; they had carried fire and gun and "Canned Bill" through the enemy's country. Our 13th Company had forsaken Cape Haitien after the scrap at Haut-de-Cap on Sunday, the 26th of September, and had gone on to occupy Grand Riviere. In October, 1915, we fought up and down the railroad from Grand Riviere to Bahon, and at Bahon on the night of the 22nd. On the 28th we located the Caco



Not drawn to scale.

main body, if such it could be called, at Ft. Riviere. We found out, quite by accident, that there was an old fort up in those Black Mountains. Our guide was a captured Caco, who having guided us was afraid to return to his gang and hung to us for protection. He had heard of Ft. Riviere, but even he did not know its exact location. While chasing bandits we stumbled on the fort. The Cacos did not stay in Ft. Riviere, and at that time were in scattered bands everywhere in the mountains; their conch shell horns and Voodoo drums sounded off down in the direction of the Horseshoe Bend of the railroad, between Bahon and Grand Riviere. We fought some more up and down the railroad and then got word of the gang at Ft. Capois. Our company was then based on South Mountain, east of Bahon, and eventually took part in the attack on Capois, the 5th of November. The battle of Ft. Capois was a separate operation, as was the capture of Camp Berthol on the 8th and the skirmish at Caracol on the 12th. Our company was in all those engagements, but they will not be described here, for our subject is the capture of Ft. Riviere, which took place the 17th of November, 1915. Ever since discovering old Ft. Riviere we had been busy tracking Cacos when word came to us that the place was again occupied, this time by the "Gros Chefs" and the main body.

Group of Marine Officers and Men Inside the Fort

In describing the plan to capture Ft. Riviere and how this plan was actually carried out, I am certain to omit some items and may perhaps make some errors. I have had access to few notes. However, this is, in the main, the story: Captain Chandler Campbell's company, with Lieut. Emory, Dr. Boone and myself attached, was to take position, during the night of the 16th of November, under cover on the reverse slope of the ridge, about one thousand yards southeast of the fort. We were to be prepared to attack the southeastern corner of the fort at about 8 a. m. Our machine guns (Benet's) were to stay up on the ridge and cover our approach by firing over our heads while we went down the mountain side, through the brush in a small dry stream. Half-way between the dry run and the fort wall, they were to cease firing over us, but fire north at any Cacos who jumped off the east wall and tried to escape to the east. Our machine gunners were informed as to the location of the other attacking groups so that they would not fire on them. Captain Barker, with Lieut. Stack and the Marine Detachment, U. S. S. Connecticut, had exactly the same plan as ours except their attack was to be made against the south wall of the fort, just on our left, and their machine guns were to fire west at any escaping enemy who left the fort over the south wall. Lieut. McCaughey, U. S. N., with a ship's division of sailors from the Connecticut

was to come up from Grande Riviere during the night, or early morning, and reach a point on the trail north of the fort, and about five hundred yards therefrom, by 8 a. m., the 17th. He was to deploy astride the trail and prevent the enemy's escape to the north. Major Smedley D. Butler was in command and he brought Captain W. W. Low, Lieut George Stowell, and their company of marines over from San Rafael during the night of the 16th. They remained concealed in the woods about eight hundred yards west of the fort. Captain Low's company had orders to attack the west wall of the fort, at about 8 a. m. on the 17th. Major Butler came over to our bivouac during the night of the 16th and explained his plan. It was about as I have already described. He said that the time was set at **about** 8 a. m., since that should give McCaughey's column time to get into position, and further, that he would give three blasts on his whistle to get the attack under way. If the enemy discovered our movements and started to escape he would give the whistle signal and start the attack whether McCaughey was ready or not. Of course we were not to attack before daylight under any conditions as the danger of our own cross fire was too great. The accompanying sketch shows (but not to scale) the relative positions of the attacking groups and the directions of attack. We had seen our position and the fort before dark on the 16th. we knew the old fort to be occupied; we could see the Cacos inside, but we did not know their strength.

Marines on the Walls of the Fort Silhouetted Against the Morning Sun

The three blasts on the whistle were sounded about 7:30 a. m.—why before 8 a. m. I don't know. Perhaps some enemy that I could not see had started out the break in the west wall. In any event our columns advanced on the fort all according to plan. We could see Captain Low's line of skirmishers advancing over their rolling plain as we rushed down the hillside. The Cacos were completely surprised and our line got up to the wall without firing a shot; the only firing I heard was our own machine guns. Perhaps the Cacos fired at us, but I doubt it. They did fire a few shots at Captain Low's line, but there were no casualties among the attackers. Cacos tried to escape by jumping off the south wall and were killed by our machine gun fire; some tried to escape to the west, but they were stopped by Captain Low's men. They say that a few of the Cacos jumped off that high north wall, but some took time to climb down the trees. All must have been surprised a few minutes later when they bumped into McCaughey's column down the trail. Captain Low's route to the fort was much the shortest and was practically level going. Most of his men used the break in the wall to get inside. Major Butler was one of the first to go through the gap. Lieut. Stowell, who is not of the thin wiry type, wedged himself through, but not before the Cacos had taken several shots at him while his shirt was caught on the sharp edges. With the gap open again, men from Captain Low's company were soon swarming into all the interior compartments. They were up on the walls; they

The End of the "Caco" Stronghold. A Charge of Dynamite Destroys the Walls

(Continued on page 64)

Marine Corps Communications Personnel

By CAPTAIN ALBERT W. PAUL, U. S. M. C.

THIS is the age of specialization. The average man can no longer hope to be an expert in several lines of activity. The jack of all trades and master of none is finding it more and more difficult to keep his bread buttered. Yet jacks of all trades are necessary and it is surprising, indeed, how well some activities can function when their wheels of operation are in the main manned by such "jacks." The Marine is required to perform a varied class of tasks. It cannot be said that such performers are all masters of their various trades, and yet we pride ourselves on our efficiency and our manner of accomplishment. Some may argue that on that basis the marine must indeed be above the average of mankind. Be that as it may, there is, nevertheless, room for considerable improvement.

Let us consider the matter of communications. This subject can no longer be treated as a stepchild, to be cast about at will, ignored and fed on leftovers. It has grown to such an extent that it has become a matter of national and international importance. The Army and the Navy have long realized and recognized it worth. Each of these services has within it an organization especially and specifically charged to "render unto Caesar the things which are Caesar's" in all matters of communications. This pertains not only to their own respective branches, but also to the manner in which its operation links up with the national and world scheme of communications.

The Marine Corps plays an important part in the interests of our government. We frequently become associated with matters of foreign policy. We operate on our own and, therefore, must depend upon our own personnel and equipment to carry out the various assigned missions. However, we are an integral part of a greater organization, the U. S. Navy. Since the Navy maintains a communication division having a separate complement prescribed by the Bureau of Navigation, and, since the Marine Corps communications form an important link in the great chain, it seems important that the Marine Corps also have a separate and distinct unit, i.e. section of communication and have a separate complement authorized specifically for communication duty. Further, adequate and suitable grades should be provided for the enlisted personnel, and the distribution of such personnel should be operated by the section of communication.

Any officer at any time may find himself with an assignment, the details of which may not be entirely comprehensible. It is also true that any officer at any time may be assigned to duty which involves, either directly or indirectly, an association with matters of communication. It is important, therefore, that the average officer know something about communication, its operation, limitations and requirements. He may be proficient in tuning in on a multiplicity of broadcast stations on his private radio set. He may even be quite familiar with the whys and wherefores of the interior of his set. But that knowledge alone is not sufficient to qualify him for communication duty. There are also other phases that enter into the technical and tactical study of the art.

Communications in the Marine Corps have been a sort of football, passed from one to the other. Officers assigned to this duty have been and are of a junior rank. Not infrequently such an officer will be given antiquated and inadequate equipment, partially trained or wholly untrained personnel with perhaps a few exceptions, and under pressing conditions he must install, operate and maintain the various agencies of communications. He does it, but not without casualties to nerves, morale, equipment and perhaps reputation, as well as lesser efficiency in operation. The communications officer, by reason of his junior rank, has little voice to bring about a remedy. He depends upon higher ranking officers of the line and staff for support in a solution of the problem. However, he is in no position to urge the matter for obvious reasons and, unless such line and staff officers interest themselves in the vital needs affecting our communications the same old conditions will prevail. Communications must have the sympathy and understanding of the higher ranking officers in order to grow.

The importance of communications seems to be realized when confronted with a condition stressing the imperative need for the immediate transmission of some message. The appreciation of the importance of communications, in many instances, ceases when the moment of need has passed. But as in time of peace we should prepare for war, so equally true, that when there is time to improve communications we do not become lukewarm with lack of interest against a time of need.

Tables of Allowances are excellent but they are of small practical value when green with age, or when they do not measure up to the ever changing needs of the Corps. Tables of Allowances should apply to the Marine Corps solely and should allow a certain amount of flexibility. It is not infrequent that a regiment may be ordered on independent duty, and yet if a certain article, as for example, a battery charging unit, is not provided for a regiment in the Table of Allowances, that organization may leave without one in spite of the communication officer's tears and entreaties. The communication officer becomes the goat when radio is in-operative.

The communication service of the Marine Corps must keep abreast of the exceedingly rapid strides made by that branch of science in civil life, and also with those being made by the other branches of the service. However, this cannot be efficiently accomplished without proper compensation to those responsible for and actually performing this very essential work. Under the present system of compensation it is next to impossible to retain the services of trained men after the expiration of their enlistments; in other words, there is no incentive (other than pure love of service) for a man to reenlist. To the contrary, he has

Drawing by Capt. John W. Thomason, Jr.

every inducement to seek a position in civil life or to renlist in other branches of the service where the remuneration is many times greater and the chances of advancement are exceedingly good. It appears that the most effective and at the same time the quickest method of remedying this unbalanced state of affairs is to secure additional non-commissioned officer ratings for communications duty only. This undoubtedly would materially increase the number of reenlistments, thereby cutting down the cost of recruiting, and would effect a great saving in the amount of time that must be spent in the training of personnel. At the same time, the increased ratings will open a new field of incentive for those connected with communications to strive for better ratings. At present the horizon of the enlisted man in communication work is the rank of sergeant (4th pay grade). The rating of sergeant and also that of corporal have been taken from line organizations, to the detriment of the line activities. In other words, there has never been a definite allotment of ratings for the communication service and commanders have recognized this need by taking ratings from the line organizations and alloting them to the local communication organizations. This naturally gives rise to discontent in both line and communication service and does not accomplish the most efficient results.

The communication service of the Marine Corps is inseparably linked with the Naval Communication service, and must be raised to a standard that will permit the former to so function as to not weaken the chain of combined communication service. The Marine Corps is now charged with the sole responsibility of operating the following important Naval radio stations: Quantico, Virginia; Parris Island, South Carolina; Peiping, China; Managua, Nicaragua; Port au Prince, Haiti; Cape Haitian, Haiti; St. Thomas, Virgin Islands; and Shanghai, China.

In addition to operating the above Naval radio stations, the Marine Corps must maintain a sufficient number of trained communication specialists to handle the communication facilities required by the East and West Coast Expeditionary Forces, and to provide personnel for the maintenance of post communication systems (telephone, etc.) throughout the Marine Corps.

Under the present system of complements, no complements are prescribed for any of the radio stations listed above, these complements being left to the discretion of the commanding officer. The fact that we have no separate complements for our radio stations operates as a hardship upon the radio station personnel because they do not receive the proportion of non-commissioned officers to which their special knowledge and technical qualifications entitle them. It is believed that separate complements should be prescribed for radio stations operated by the Marine Corps.

It is an established fact that in the U. S. Army one man out of every eight is on communication duty of some nature.

In the Navy all radio operators are in the first four pay grades, and the allowance of ratings is by percentage of the total allowance of radiomen, as shown by the following table, which is understood to be correct:

Ratings	Pay Grade	Percentage of Total
Chief Radioman	1	10%
Radioman 1 cl	2	20%
Radioman 2 cl	3	30%
Radioman 3 cl	4	40%

There are understood to be no lower ratings among radio operators ashore. Seaman are trained as operators afloat, and when they qualify are rated as Radioman 3rd Class (4th pay grade).

It may be of general interest to note the following table indicating the allowance of radio enlisted personnell only, U. S. Navy, as of 30 September 1930.

Rate		Allowed	In Service	Vacancies
CRM	(1st Pay Grade)	476	466	10
RM1c	(2nd Pay Grade)	861	970	..
RM2c	(3rd Pay Grade)	1185	857	328
RM3c	(4th Pay Grade)	752	918	..
	Totals	3274	3211	339

The following plan proposes special rank for non-commissioned specialists in the Marine Corps, in the first five pay grades, and is based upon the requirements of fixed shore Naval radio stations, operated by the Marine Corps, training centers, expeditionary units, and the pool.

	1st Pay Grade	2nd Pay Grade	3rd Pay Grade	4th Pay Grade	5th Pay Grade
Pool	—	—	1	2	3
Parris Island R. S.	1	—	1	2	2
1st Brig. R. R. incl. Cape Haitian	1	—	2	5	6
Peiping R. S.	1	—	1	8	8
Signal Bn.	2	1	2	6	10
Quantico R. S.	—	1	1	3	3
1st Bn, 10th Regt, USMC	—	1	1	1	2
4th Regt, USMC	1	3	1	4	4
5th Regt, USMC	1	3	1	4	4
6th Regt, USMC (in pool until mobilized)	1	3	1	4	4
Managua R. S.	1	—	1	4	4
Totals	9	12	13	43	50

Let us compare the allowance of communication ratings of a U. S. Army infantry brigade reinforced by one battalion of field artillery with that of a Marine brigade similarly reinforced. In view of the nature of the duty performed by the Marine Corps Expeditionary Forces, it has been considered sufficient to assign only one battalion of field artillery to a brigade, instead of the customary regiment, for the purpose of comparison.

Attention is invited to the differences noted in the following table tending to the disadvantage of the Marine Corps.

INFANTRY BRIGADE REINFORCED BY ONE BATTALION OF FIELD ARTILLERY

TABLE A

	Pay Grades 1st	2nd	3rd	4th	5th	6th	7th	Total
Army	1	2	8	35	47	44	167	295
Marine Corps	0	3	0	15	42	38	180	273
Difference, i. e., M. C. shortage x 2	—2	+2	—16	—22	—10	—12	+26	—44

Note: Since it is deemed advisable that the Marine Corps should have two reinforced brigades available for expeditionary duty, the differences shown in the foregoing table should be multiplied by two.

It must be borne in mind that the mission of the Marine Corps is vitally different from that of the Army in which that organization contemplate major operations in which all organizations are held intact, whereas in the Marine Corps it is absolutely essential that organizations (such as battalion and even companies) be split and distributed over a wide area. This greatly increases the problems of communication service. Here, for example, it is apparent that the Marine Corps should have specially qualified non-commissioned officers to establish, operate and maintain the needed communication agencies.

As a further phase let us study the permanent communication activities of the Marine Corps requiring personnel in addition to those necessary for expeditionary forces.

The following tables show comparative data relative to shore communication stations within the Army, Navy, and the Marine Corps. The U. S. Army and U. S. Navy radio shore stations as shown generally correspond to similar stations operated by Marine Corps personnel.

The Marine Corps communication personnel operate seven shore stations in addition to those operated by expeditionary forces. Out of the seven radio shore stations, four are designated as Naval Radio Stations. It will be noted (table B) that of the total of 55 Marine Corps radio men, only two or 3.64% are included in the first three pay grades, whereas (table C) of the total of 69 Naval radio men, the entire 69 or 100% are included within the first three pay grades.

As a further comment, attention is invited to the contrast in pay grades existing between the two Marine Corps operators at St. John, Virgin Islands, (table B) being in the seventh pay grade as against the two Naval operators at St. Croix, Virgin Islands, (table C) one being in the first pay grade and the other in the second pay grade.

The data contained in table D shows the U. S. Army Signal Corps personnel only, the bulk of the communication units being trained and supplied by the local garrisons. The activities of the Army personnel shown compare with those of the Marine Corps. Attention is invited to similar contrast to the disadvantage of the Marine Corps. It will be noted (table B) that only 2.88% of the Marine Corps personnel are included in the first three pay grades, whereas (table D) 64.86% of the Signal Corps, U. S. Army, are so included.

All of these stations operate under somewhat the same requirements; its personnel are similarly proficient and the same technical knowledge is necessary; yet the difference in the pay grades of the Marine Corps as compared with the Army and Navy is quite in contrast.

TABLE B

U. S. MARINE CORPS—ENLISTED ALLOWANCES—RADIO ACTIVITIES—SHORE STATIONS (ADDITIONAL TO EXPEDITIONARY FORCES) FISCAL YEAR—1930

	Pay Grades 1st	2nd	3rd	4th	5th	6th	7th	Total
Port au Prince, Haiti	0	1	0	1	1	0	8	11
Cape Haitian, Haiti	0	0	0	0	0	1	2	3
St. John, V. I.	0	0	0	0	0	0	2	2
Peiping, China	0	0	1	2	2	0	16	21
Guam (Aviation)	0	0	0	0	1	0	1	2
Quantico, Va.	0	0	0	2	1	0	8	11
Parris Island, S. C.	0	0	0	1	0	0	4	5
Sub Totals	0	1	1	6	5	1	41	55
Percentage (1st 3 pay grades)		3.64%						

Table B (Cont.)

TELEPHONE AND MESSAGE CENTER ACTIVITIES

	1st	2nd	3rd	4th	5th	6th	7th	Total
Quantico, Va.	0	0	1	4	2	0	30	37
San Diego, Calif.	0	0	0	0	1	3	3	7
St. Thomas, V. I.	0	0	0	0	0	0	5	5
Sub Totals	0	0	1	4	3	3	38	49
Totals	0	1	2	10	8	4	79	104
Grand Totals		3				101		
Total Percentage		2.88%				97.12%		

TABLE C

U. S. NAVY—ENLISTED ALLOWANCE—RADIO ACTIVITIES—SHORE STATIONS (RADIO STATIONS AND ADMINISTRATIVE OFFICES EXCLUDED) SHOWING SUCH STATIONS AS GENERALLY CORRESPOND TO SIMILAR SHORE STATIONS OPERATED BY THE MARINE CORPS—FISCAL YEAR 1930.

Units	Pay Grades 1st	2nd	3rd	4th	5th	6th	7th	Total
San Juan, P. R.	4	5	10	0	0	0	0	19
St. Thomas, V. I.	1	1	2	0	0	0	0	4
St. Croix, V. I.	1	1	0	0	0	0	0	2
Guam (control and transmitting)	5	3	9	0	0	0	0	17
Olopango	1	1	2	0	0	0	0	4
Hampton Roads	4	4	10	0	0	0	0	18
Norfolk	1	1	3	0	0	0	0	5
Sub Total	17	17	36	0	0	0	0	69
Total		69						
Total Percentage		100%						

TABLE D

SIGNAL CORPS—U. S. ARMY—ENLISTED ALLOWANCE—COMMUNICATION ACTIVITIES SHOWING SIGNAL CORPS ENLISTED PERSONNEL ONLY—BULK OF COMMUNICATION SERVICE FURNISHED BY LOCAL GARRISONS—FISCAL YEAR 1930.

Units	Pay Grades 1st	2nd	3rd	4th	5th	6th	7th	Total
Philippines	2	2	4	5	0	0	0	13
Canal Zone	2	2	5	6	0	0	0	15
Ft. Benj. Harrison, Ind.	1	0	0	1	0	0	0	2
Ft. McPherson, Ga.	1	0	0	1	0	0	0	2
Jefferson Bks., Mo.	0	1	1	0	0	0	0	2
Ft. D. A. Russell, Wyo.	0	1	0	0	0	0	0	1
Ft. Douglas, Utah	0	0	2	0	0	0	0	2
Sub Totals	6	6	12	13	0	0	0	37
Total		24			13			
Total Percentage		64.86%			35.14%			

We have dwelt herein mainly on the subject of personnel but there are other requirements as well. There is an urgent need for modern equipment, light weight, rugged and efficient in operation. There is the important matter of standardization of material, preparation and distribution of uniform communication publications applicable to the Marine Corps, and suitable and adequate training and distribution of personnel. All of these matters should receive the serious and earnest consideration of every officer in the Corps, followed by a material manifestation of such study, to the end that our communications may be lifted from a haphazard condition to one of sound and well-organized efficiency.

Aviation in Guerrilla Warfare

By CAPTAIN H. DENNY CAMPBELL, U. S. M. C.

Spanish Column in Morocco, Accompanied By a Plane

THE scope of this paper includes a thorough study of the use and employment of aircraft in guerrilla warfare and its application to the peculiar situations typical of this type of conflict. It also includes a brief consideration of the justification of the use of aircraft from a purely financial standpoint. Equipment is covered briefly since it is considered that the type of airplane and other equipment used will be confined almost entirely to what is on hand, that best suits the conditions to be met. The subject is presented from the standpoint of a large nation, coming to the assistance of a weaker one in subduing internal disorders, or for the maintenance of law and order of protectorates and colonies, although the principles advanced are applicable to any war of the guerrilla type.

Whenever the term aviation, air force, air service or air arm is used throughout this paper it is meant to refer to the aviation forces as a whole and the various terms are used to avoid repetition.

It is not the purpose of this paper to enter into the minute details of execution, but rather to discuss the use of aviation in guerrilla warfare from the viewpoint of the broader principles of its employment and to justify its existence.

The armed forces of any large nation are called upon to serve in many quarters of the globe and to fight against peoples in all stages of progress in civilization. By far the majority of these campaigns take the nature of small wars against an uncivilized or a semi-civilized enemy. The circumstances of such wars will vary enormously, owing to the differences in the armament and habits of the enemy, and with the climatic and physical conditions of the country. The general principles of war, will, as a rule, remain unchanged; some, however, assuming a relatively greater importance than others, such as surprise, security and cooperation.

The United States is frequently called upon to intervene in behalf of weaker governments by sending an expeditionary force to their assistance or for the protection of American lives and property, and by frequently is meant far more often than is realized by the general public of this large nation, secure behind their own defenses, their liberty, civilization and prosperity, gained at the expense of the blood of their forefathers. To illustrate this statement and as a basis for substantiation of other facts and principles connected with the subject matter of this paper, in support of which no other confirmation is submitted, the writer will cite his own experience. The author, in his little over twelve years' service, has participated, to some extent, in five campaigns, namely: Mexico, Haiti, Santo Domingo, Nicaragua and the World War, and China from a supply and training standpoint only. Thus we see that the frequency of these conflicts is such as to be almost continuous, if not overlapping.

Still another conclusion to be deduced from the example cited above is that the majority of these campaigns take place in Latin American republics and are characterized by the type of warfare to which we are now giving our consideration. Even at the present writing the United States Marines are engaged in one of these wars in Nicaragua and are occupying the Republic of Haiti for the maintenance of law and order.

Guerrilla Warfare Defined

In order that we may have a proper understanding of the subject under discussion it might be well here to define guerrilla warfare.

Warfare is defined by Webster as military operations between enemies, and guerrilla is a term commonly used to denote war carried on by bands in any irregular and unorganized manner. The term, in its broader sense, has come to include forces larger than bands and which fight in a more or less organized manner at times, but which do not conform to the laws and customs of war.

At the Hague Conference of 1899, the position of irregular combatants was one of the subjects dealt with, and the rules there adopted were reaffirmed at the Conference of 1907. They provide that irregular bands in order to enjoy recognition as belligerent forces should:

(1) Have at their head a person responsible for subordinates,

(2) Wear some fixed distinctive badge recognizeable at a distance.
(3) Carry arms openly, and
(4) Conform in their operations to the laws and customs of war.

The use of aviation in guerrilla warfare is of comparatively recent origin although not as recent as one would at first be led to suppose. Let us consider for a moment the inception of aviation as used in this type of combat.

Italy

History tells us aviation was first used in guerrilla warfare by the Italians during the Lybian Campaign in Tripoli in 1911. A few pertinent quotations from the record of these aerial operations as given in the Italian Military paper "La Forze Armate" will suffice to show the difficulties under which these brave men operated:

> "The ships were equipped with fifty horsepower engines and had an endurance of less than two hours. They did not climb over one thousand meters, but in the hands of such skilled pilots, it was expected that they would prove very valuable for reconnaissance against an enemy who had never seen an airplane, did not try to conceal itself and marched in long visible columns."
>
> "Considering that all airplanes were single-seaters, the difficulty of snapping pictures with ordinary cameras, while piloting, is evident."
>
> "The first flight over the lines was made October 24, 1911."
>
> "When the commander received the aviators' report he did not believe it."
>
> "He was finally convinced."
>
> "The commander changed his plans * * * * . It resulted in an Italian victory, very probably on account of the aerial reconnaissance of October 24th and 25th."
>
> "The great importance of aviation had been fully recognized."

This also constitutes the first use of aviation in war. Lieutenant Manzini was killed while in flight, by infantry fire. He was the first pilot killed in war operations. Italy, first of all nations, had used aviation, not only in guerrilla warfare but in any war operations.

French Plane Used For Carrying Wounded in Morocco

England

In his telegram of June 11, 1920, the G. O. C., Mesopotamia quoted the recommendation of the Civil Commission:

> "Action by aircraft is the only means of bringing the Arab Government to its senses." (Royal Air Force Communique No. 3.)
>
> "On September 10, 1920, three hundred rebels who had been attacking a post at Abujisrah since the previous evening fled at the approach of aeroplanes." (Royal Air Force Communique No. 3.)

In a cable dated November 11, 1920, the G. O. C., Mesopotamia stated:

> "Spirit of insurgent tribes has been broken by punitive measures adopted by troops and the Royal Air Force during past ten days and Sheikhs of all important tribes in Hilla-Shamirya area have been making unconditional surrenders daily." (Royal Air Force Communique No. 3.)

France

The French were quick to realize the value of military aviation in subduing their rebellious colonies and for subsequent law and order. It has been especially valuable during the past few years in Morocco, Algiers and Tunis.

In Morocco (1926):

> "To reinforce the action of aviation, it has been judged suitable to send to Morocco an air escadrille of the Navy, equipped with Farman planes, which have a radius of action more considerable than the Breguet 14-A2. This escadrille has immediately made its services greatly appreciated and has rapidly adapted itself to the special conditions of warfare found in Morocco." (Military role of aviation in Morocco, by General Niessel.)

The United States

The airplane was first used by the United States in guerrilla warfare, and as a matter of fact in warfare of any nature, by the U. S. Navy in 1914, at Vera Cruz, Mexico, and it was here that the first American plane ever came under fire. Their missions were observation only. It was next used by the U. S. Army on the Mexican border in 1916 on reconnaissance and messenger flights. We next saw it used by the United States Marines in the pacification of Haiti and Santo Domingo in the first few years following the World War. Several successful flights were reported during

American Fliers Serving With the French in the War Against the Riffs, Gathered About a Visiting General

these operations, including reconnaissance, liaison and ground attack missions.

More recently in Nicaragua:

> "It may be said from a tactical point of view, that the Air Squadrons of this Brigade have not only proved to be a valuable support to our troops in action, but have formed a powerful, mobile reserve for either the support of combat troops or for independent missions." (Annual Report Aircraft Squadrons, Second Brigade, 1927-28.)

Mexico

The most recent example we have on record is the present employment of aviation by the federal forces of Mexico against the revolutionists in that country. A recent announcement states:

> "More military airplanes are badly needed and especially desired by the Mexican Government because of their effectiveness in this type of warfare and because of their disastrous effect on the enemy." (Associated Press, Mexico City, March 28, 1929.)

Application of the Principles of War

The ultimate OBJECTIVE in guerrilla warfare should be the moral destruction of the enemy force rather than his physical destruction. While it will be necessary, in order to gain local objectives, to produce physical destruction among the enemy ranks, this loss of life should be confined to the minimum requisite with accomplishing the mission. When we consider that the object of practically all guerrilla wars is the subduing of hostile factions, not as an end in itself, but as a means to enlighten less fortunate peoples, to improve their conditions of living, their education, their development in the commercial world and for the general advancement of the nation at large, it is at once evident that it sholuld be accomplished with the minimum physical destruction consistent with an economical administration of our own operations. This paper will show how aviation can effect great physical destruction when necessary and also how it can accomplish that ultimate objective with the minimum of bloodshed. Persistency in the ultimate objective is important.

No guerrilla campaign can ever hope to be won without first taking the OFFENSIVE against the guerrilla forces and maintaining it throughout until victory is attained. A defensive attitude or territorial occupation is not effective until the insurgents have first been defeated in the field or disorganized, and does not prevent them from carrying on their depredations against ranches and outlying districts nor from concentrating their forces in operations against the smaller garrisons. Aviation can carry the offensive into every corner of the enemy territory and can also facilitate the offensive of the ground troops.

Aviation influences the principle of MASS in that it adds to the striking power of a force by its presence and can further assist in the concentration of troops at the decisive point.

The element of SURPRISE is usually lacking in ground operations against bandit forces, since their scouts, patrols, sympathizers and the grape-vine (local intelligence) are usually most effective. On the contrary their trickery and cunning, their intimate knowledge of the terrain, trails and avenues of escape, lends itself admirably to their instinctive methods of combat, consisting of surprise attacks on towns, ambushes, attacking columns of men and animals on the march, inflicting their damage and retiring before the attack-

(Continued on page 71)

A New Barracks Far From the Sea

By CAPTAIN R. J. BARTHOLOMEW, U. S. M. C.

ABOUT two miles from the southern end of Walker Lake, in the midst of a desolate region of sand extending many miles in every direction, lies the Naval Ammunition Depot, Hawthorne, Nevada. The depot comprises three fenced-in areas in the center, roughly, of a government tract of land consisting of about 218 square miles. The fenced-in areas are: The magazine section (about 12½ miles around), the industrial section, and the beach development.

In the magazine area are located 12 groups, of 7 magazines each. Each magazine is supposed to hold about 70 tons of explosives. Each magazine is sufficiently far from the others so that there is no danger of a sympathetic explosion. In this area also is to be built a mine filling plant. There is no vegetation here except sage brush, so that danger of fire is very small, it being practically limited to one started by lightning and but little danger of that due to construction. Magazines are of the "igloo" type, partially underground and covered with earth.

The industrial section is three and one-tenth miles from the magazine section, gate to gate. Here are located the Administration Building, six officers' quarters, sixteen quarters for civilian employees and warrant officers, shops, central heating plant, golf course, athletic fields, recreation building, stables, and the Marine Barracks. All buildings, except quarters, are of modern concrete construction. The barracks galley is probably the best equipped in the services. The building is situated on the best location in the area and faces the lake. There is a second floor porch extending the length of the building. At first glance the barracks seems the ultimate to be desired (even the brig has a marble bath), however, closer inspection reveals many details to be attended to, such as shelves, paint, drains in mess hall floors, floors of concrete hard to keep clean, and erection of a garbage house and a vegetable locker. These faults are being corrected as fast as the station allowance and circumstances will permit. Be it known that economy has hit the Navy as well as the Marine Corps.

The third fenced-in area is about three and one-half miles north of the industrial section. Here on a sandy shore is the beach development, with boat houses, diving boards, and dressing rooms. The lake itself is about the size of Guam, or about twenty-five miles long and seven miles wide—at the widest part.

Duty for enlisted men is fair—they having two days off providing! Lack of female companionship is a hardship on some of the socially inclined. However the enlisted men's dances are attended by girls from as far away as Reno—156 miles. The dances are a bright spot in the social life hereabouts, partially on account of the attraction of the uniform, partially, perhaps, because persons wishing to come know that there will be no fights to mar the occasion —not uncommon spectacles in this section.

Hawthorne is a town with a normal population of about one hundred. Yerington, 60 miles away, is the closest town large enough to be called such. It has a population of about 500. Reno is the only city in the State deserving of that title and it lives up to its boast—"The biggest little city in the world." Incidentally Reno is attractive to others besides would-be divorcees.

There is a radio in the barracks and five movie shows a week. We expect to have a talkie by May. To summarize: For enlisted men, duty here is pleasant or not, depending on his inclinations. If very much feminine attention is necessary, it will not be found here, but if one likes outdoor amusements then there is plenty to do. We have a successful basketball team that is playing games with all teams within a radius of 150 miles; results so far, won 9, lost 0. We hope to have a good baseball team this summer. There is also volley-ball and playground ball, with tennis and handball to come.

The officers will find that the south may talk of hospitality, but that the Nevadan knows best how to extend it. The real open-handed generosity of the fabled west is still practiced here. The writer went to Fallon on business one day, was invited to dinner and was casually introduced to the Governor, a United States Congressman and several other dignitaries. One meets these people as a part of their official position. Incidentally even the Governor is called by his first name—mister is an appellation seldom used here except by outsiders.

There is no State law against gambling.

The climate here compares favorably with that of southern California.

The establishing of a new command is an interesting experience. One has few precedents to guide him. The first duty I had on arrival was to find a place for the men to sleep when they arrived, food to eat and a place with facilities to cook it. This accomplished, a survey was made prior to the making of recommendations concerning the establishment of the guard. The most difficult as well as the most interesting part came, however, after the arrival of the detachment. The whipping of these men into a unit in fact as well as in name. Headquarters may order certain officers and men to a certain place and designate them as a unit. It is the function of the local command, however, to make such designation true in all respects. The amount of paper work was staggering. Four men worked over it for ten hours daily, including Sundays, for two months. Fortunately for the writer a good quartermaster sergeant was sent on temporary duty to assist in this organization. I might remark here, also, that I will never call members of the quartermaster's department "dog-robbers" again.

One feature that has been of the utmost helpfulness is the attitude of the Commanding General's office, San Francisco, the Depot Quartermaster and his assistants, and the Inspector of Ordnance in Charge and his staff.

Others who come after us will find the finished product. We who have had a hand in the finishing process will have had an interesting period of service to look back upon.

Andrew Mealey and the Mongoose

By COLONEL HAROLD C. REISINGER, U. S. M. C.

AS sometimes happens with General Elliott, he will start on one line of reminiscence and wind up with something entirely different; that was the case when he told me this story.

I asked for something on the subject of the fifers in the Corps after we had talked about the presentation of the Fessenden Fifes to the Marines in Shanghai last year.

"Here's something I'll bet you didn't know," he said with an amused twinkle. "Did you know that the old enlistment papers of the apprentices of the corps read that they were enlisted 'to learn the mysteries of music?'

"In the old barracks here in Washington I've seen from sixty to eighty apprentices out at the crack of dawn for reveille; about half of them were fifers and the rest were drummers. There was also a big bass drum that was beaten on both ends and made a terrific noise. For fifteen minutes they marched around the old quadrangle playing 'The Breaking of the Day,' 'Hearts of Oak,' 'Blue Bonnets Over the Border,' 'Garry Owen,' and other airs that had come down from the British regiments of the Colonial days.

"Drum Major Roach would be in charge of the boys. He was an enormous man, tall, straight and very broad of shoulder, and he had a long iron-grey mustache as thick as your wrist. Roach, by the way, was in the Marine Detachment that saw memorable service with Robert E. Lee at Harper's Ferry and was the man who brought John Brown out of the fire house.

"We started our day early then—a bit earlier than now—and frequently had battalion drill before breakfast, and that wasn't much fun, especially in winter. You had to be an early riser to live in the neighborhood of the barracks; there was no sleep after our fife and drum corps got warmed to their work.

"This practice of breaking out the fifes and drums for reveille continued until after Zeeland's day as Commandant, then the demand for buglers aboard ship and the claim that the fife could not be effectively used in battle brought about its downfall. When the order came out abolishing the reveille parade, there was a violent protest from the good people who lived around the barracks; they even got up a petition to revive the formation. Having grown used to the racket, they missed the shrill of the fife and the roll of the drums at the beginning of their day.

"I'm glad to know the Corps has a fife and drum corps again and hope to hear it some day. There is a lift and inspiration to the well-played fife that makes for fine march music.

"We had a fine fifer on the 'Monongahela.' There was a fine ship; beautiful lines, heavily sparred; she bent more sail than the 'Lancaster' and she sailed like a witch. Both Captain Thornton and Captain Kimberley kept her in shipshape and as clean as a new pin. Kimberley was a fine type of old-fashioned sailorman and loved his ship—she came first in his thoughts. I heard a good story about him. He was said to have gone to Europe as the executive of the 'Wabash' and went ashore once in three years and that time to buy a pair of shoes. Well, this fifer——".

The General stopped abruptly, then he chuckled, "Did I ever tell you of my mongoose and Andrew Mealy?" he asked.

I had never heard it and told him so.

"When I was in Capetown on the 'Monongahela' in 1874 I got arrested—there was another officer with me but he doesn't figure in the yarn and after becoming a Rear Admiral he has passed on to his just reward. Well, we were 'taken in charge' as the British say by a constable for fast and furious riding, resisting Her Majesty's law officer and some other offense which we didn't actually commit, although my companion did lose his temper and fully and particularly expressed himself to the constable who arrested us. Whatever may have been my opinion of this constable I am bound to admit that his perseverance and sense of duty were commendable The trouble started on the outskirts of Capetown. This policeman hailed us but we paid no attention to him and rode on to the next town. There we stopped for refreshments. In the midst of our enjoyment, much to our surprise, our persistent policeman came trudging up the road and took us in charge. Not only that, but he marched us back, holding our horses by the bridles, to a justice of the peace in Capetown. Thus he had walked eight miles in the performance of his duty. All the time he maintained a most serious and impressive mien. When he landed us at the house of the justice of the peace his troubles were not over, nor were ours, for the gentleman was not at home. Well, after thinking the matter over quite deliberately he then marched us to the home of a Cockney corporal of police who, after hearing his report, wrote down our names and collected a pound sterling from each. We were then free to go back to the ship. We left, but not before expressing ourselves rather strongly—an indulgence that seemed very foolish to me when three days later we were summoned to appear before a judge for trial. I took along about five pounds in coin of the Realm and was prepared to eat crow in order to keep out of further trouble. We found the judge a very fine man, upstanding, military in appearance and possessed of a sense of humor. He let us off with no further fine than the one pound collected by the police corporal.

"Later I met this judge and we became fast friends. I went down to his home at Simontown, 18 miles from Capetown, to spend the week-end. The road connecting the two towns was one of the finest I've ever seen, bordered by very handsome houses of the rich of Capetown. During this visit our talk turned to the mongoose and his enmity toward the cobra. My host had two in his home and presented one to me—that's how I got my mongoose.

"This little fellow was a wonderful pet, clean, full of fun and curiosity, and very tame. He had many queer, half-human ways and gestures about him that were very attractive. As is the case with so many

(Continued on page 52)

Books of Interest to Marines

THE REMINISCENCES OF A MARINE.
By Major General John A. Lejeune, U. S. Marine Corps.
Publishers: Dorrance and Company, Philadelphia.
488 pages. $4.00.
Reviewed by Brigadier General Dion Williams, U. S. Marine Corps.

For the accomplishment of the task which he set for himself in writing the "Reminiscences of a Marine" General Lejeune drew liberally upon the stores of memory of a busy life replete with varied service at home and abroad, afloat and ashore, and the result is a book of surpassing interest to the soldier and the civilian alike.

A believer in the theory of heriditary influence, he begins his work with an outline of his ancestry in their long journey from the homeland in France to the new land of promise in Nova Scotia, the Arcadia from which they were to be driven by cruel politics in which they had no voice to another far land to the south, the Louisiana which was to be their home until adventure again called and took the son of the family to Annapolis and started him upon the career which this book so well describes.

The picture of his four years at the Naval Academy contains an excellent description of the life there in the days of the "old academy", a simpler life than that of the Midshipman of today, but withal a life more exacting and probably as well designed to fit its participants for the later experiences as officers in the Naval Service as the more complicated and less directly supervised life at the great modern institution.

Another chapter tells of his experiences on the "two years' cruise" as a Midshipman, which in those days formed an important part of the course designed to fit the aspirants for naval commissions for their future duties. In an old wooden ship, the U.S.S. Vandalia, even then a relic of a former naval period he, with other members of his class, saw service in the Pacific South Sea Islands which took them through the "Samoa Disaster" of 1889, a hurricane which strewed the reef lined shore of Apia with the wrecks of three United States warships and three German men-of-war and cost many lives. The story of this debacle, which had such a sudden and vital effect upon the diplomatic tangle between Great Britain, Germany and the United States, is one of the most readable stories of the many to be found in General Lejeune's book, and the student of world history will find it well worth careful perusal.

The two years' cruise over, the story takes the writer back to the Naval Academy for final examination and commission at the end of which we find the author fairly started on the career that was to make him famous as an officer of the U. S. Marine Corps. His early barracks service ashore is next described followed by incidents of a cruise to South America in the U.S.S. Bennington, one of the new steel cruisers of the famous "White Squadron" of the early nineties which marked the beginning of the return of the American Navy to an honorable position among the navies of the world.

Active participation afloat in the Caribbean campaigns of the Spanish-American War; a command ashore on the Isthmus of Panama when we took over the Canal Zone in 1903 and started the work on the great canal; command of the Marine Brigade which landed at Vera Cruz in 1914; command of the Marine Brigade in the Philippines; and varied shore dut · in the United States, are next portrayed in attractive language and interesting continuity.

But all of this is but the forerunner, the picturesque background in the life of General Lejeune before which is pictured the stirring story of his participation in the World War as the leader of the famous Second Division of the A.E.F., than which there was no greater organization in the vast Allied Crusade which forced back the rising tide of Germanic power which would have crushed for the time in the history of the world the cause of free government "of the people, for the people, and by the people."

That portion of the "Reminiscences of a Marine" which treats of the experiences of the author in the World War forms an authoritative history of the participation of the U. S. Marines in the front line fighting on the Western front and the battles at Marbache, St. Mihiel, Blanc Mont Ridge, and the Meuse-Argonne, followed by the triumphal march to the Rhine and the American occupation of one of the zones of occupied German territory on the Rhine.

The book closes with brief mention of nine years as Major General Commandant of the Marine Corps, during which term of office General Lejeune's great experience, tactful dealing with the other officials of the government, and wise counsel did much which will be to the lasting benefit of his Corps and his country; and of his retirement from active service at his own request after forty-six years' service to take up further important military duty as the Superintendent of the Virginia Military Institute.

The book is a great story of a great man, told in simple and straightforward manner, with flashes of the keen humor which has ever made it a pleasure to serve under his command, and with no vainglorious boasting of his wonderful achievements in nearly half a century with the colors at the head of America's sea-soldiers, at home and abroad, on land and sea, wherever the call of our country and its destinies have led in peace and war.

In the semi-official journal of the Marine Corps, the Gazette, it seems almost superfluous to say that it should be both a duty and a pleasure for every officer of the great Corps to read the "Reminiscences of a Marine," for he has been a real Marine and his experience has been truly wonderful.

In book reviews as they customarily appear in the better class of American magazines it has become the habit of the professional reviewers to add to their sketchy opinions of the subject matter of the book reviewed some general estimate of the character and ability of the author.

In the present instance this can be done by quoting from General Lejeune's book the graceful dedication which follows the title page in which he states that his book is, "Dedicated to the officers and en-

listed men of the Marine Corps, the Navy and the Army, with whom I have served. Devotion to duty, unswerving loyalty, fine courage and unselfish patriotism have been their dominant characteristics." Surely no soldier of any time has ever exemplified these qualities to a higher degree than has General Lejeune during the forty-seven years that have elapsed since he journeyed from his boyhood home in Louisiana to Annapolis to don the uniform of his country, which he has proudly worn ever since with such eminent success and high credit.

When he retired from active service at his own request after forty-six years' service it was not to seek a well earned rest beneath the laurels he had won on many fields, but it was to take up more work as the head of a famous military college upon whose rolls are borne the names of many gallant soldiers and in such a position to let his own life and counsel be a living inspiration to many young men starting in on their careers. As he himself aptly put it when he said, "I do not feel that I have really retired but only that I have moved my headquarters and taken up another command," his work still continues and hale and hearty and full of life and courage he still faces the front, loyal to the traditions of his great Corps and ever true to its motto, "Semper Fidelis."

JEB STUART.

By John W. Thomason, Jr., Captain, U. S. Marine Corps. Publishers: Charles Scribner's Sons, 1930. $5.00.

Reviewed by Brigadier General Dion Williams, U. S. Marine Corps.

John W. Thomason, known to a large circle of approving readers both in and out of the service as an artist and an author of distinction and increasing importance, has written a book so different from the fiction stories of the Marines in peace and war which have marked his former efforts that we are compelled to make an entirely new estimate of his standing as an author.

The delightful anecdotes that make up the two volumes, entitled "Fix Bayonets" and "Red Pants", definitely place his name high on the list of American authors in fiction; but it has remained for the present ambitious work, "Jeb Stuart", to carry his name as an author over into the higher class of analytical writers on military operations and technique. For in all truth, the chronicled events in the life of this Beau Sabreur of the Southern Cause through the dark days of the great Civil War may properly be taken for study as a text book on the employment of cavalry in open warfare, in addition to the pleasure to be derived by the casual reader with the lay mind uninterested in military technique but on the qui vive for the thrills that will come from reading of the stirring exploits of a gallant soldier.

From the boyhood days of this noted scion of the "Stuarts of Virginia" the author takes James Ewell Brown Stuart from his early home in Patrick County, Virginia, through West Point in the class of 1854 and into the commissioned ranks of the U. S. Army as a cavalry officer, where he saw active service on the Western Plains in the famous First Cavalry, pausing to note that from the officers of this regiment long lists of Generals adorned the muster rolls of both the Union and Confederate Armies. In all, "five full Generals of the Confederacy, two Union Army Commanders, and thirty-odd Corps, Division and Brigade Commanders, served in the First and Second Cavalry"; and it was in such company that Jeb Stuart got the early training that made his latter career on the battlefields of Virginia a possibility.

From his early service on the plains Lieutenant Stuart came back to his home in the East in time to be with the Marines under Colonel Robert E. Lee at the capture of John Brown and his band at Harper's Ferry in October, 1859, the first armed conflict of the long civil strife that was to test the right of the American Union to survive.

In 1861 Captain Stuart resigned his commission in the U. S. Army and offered his services to the State of Virginia, whereupon the Governor commissioned him a Major of Infantry, but soon the horsemen of the South began to gather and the training he had received with the "Horsemen of the Plains" led to his assignment as Colonel of the First Virginia Cavalry, a regiment that won fame on many a hard fought field of its native state, and from which many fine officers graduated to the higher ranks of general officer, conspicuous among whom was "Jeb Stuart".

At the head of the Virginia Cavalry Brigade Stuart rode from the First Manassas (Bull Run) to the Peninsula and through the bloody Seven Days in the Wilderness to the Second Manassas; and later, still leading the hard riding, hard fighting Southern Cavalry, with Lee in his invasion of the North he saw service at Sharpsburg (Antietam), on the Chambersburg Raid, and after the invasion failed, back again to the soil of his own Virginia and on to the Confederate victory at Fredericksburg.

Ever busy and active, with a task to do in a hurry, Jeb Stuart, now become the idol of the fighting horsemen that followed his lead, rode on through Chancellorsville and Fleetwood Heights, and again across the Potomac at the head of Lee's second invasion of the North to the battlefield of Gettysburg, "the high tide of the Confederacy" and the decisive battle of the Civil War, and once more back across the Potomac to his beloved Virginia.

In the struggles in the Wilderness where Grant stolidly held on with the grim determination to "fight it out on this line to the end come what may", General Stuart valiantly and gallantly led his veteran horsemen in the vain attempt to stem the tide of the Northern advance, and met his death from a wound received in action at the forefront of the fight with his face to the foe, died as he would have chosen had he been given the choice.

In the fine language of the author, "So, in the thirty-second year of his life, and in the fourth year of his country's independence, as he would say it, passed Jeb Stuart. All his life he was fortunate. It was given to him to toil greatly, and to enjoy greatly, to taste no little fame from the work of his hands, and to drink the best of the cup of the living. He died while there was still a thread of hope for victory."

Throughout the book the reader will find many pleasant diversions from the stern realities of historic chronicles and military details and these diversions allow many charming stories to be told in the inimitable style that has made Captain Thomason a master of the short story, a subtle weaver of narrative.

An officer of high rank, long service and varied experience, in speaking of the book, "Jeb Stuart",

(Continued on page 49)

The Line Company, a Marine Orphan

(Continued from page 24)

appropriate to these two duties have to lead squads or sections on patrol through hostile districts. In the Dominican Republic, Haiti, and in Nicaragua, conditions forced us to employ such patrolling and it involved fire action in so many cases as to establish the rule to expect the engagement always. Only the best combination of skilled leadership and good luck can spare us casualties or complete disaster in these actions especially since the enemy, as in Nicaragua, is armed either as heavily as or more heavily than our patrols. As casualties are likely to devitalize moral support from the United States besides distressing the troops in the field and as we cannot rely upon the luck factor, we must have the highest quality of leadership obtainable for these little groups to whom we are forced to assign combat missions. If the total strength of the Marine Corps were great enough to apply vast preponderance of force to our banana war situations, we might possibly rely less on leadership by non-commissioned officers, but it is our habit to stretch small numbers over great areas thus forcing us to offset with skill and daring what we lack in size.

As for the corporal, I believe his pay is in reasonable proportion to the other grades in the present scale. If the suggested sergeant grade were added to the section, the gunnery sergeant retained in the platoon, and the first sergeant were placed in the first pay grade, the expectancy of promotion for the corporal would be raised appreciably. I have heard suggestions that the company have one staff sergeant for clerical duties with a private first class or a corporal as assistant, but I think the rank of sergeant would fill the need in that quarter. This step would provide advancement for the company clerk who at present can advance only through promotion to first sergeant or by transfer away from the company. Whatever may be done along that line, let us definitely deny the company clerk promotion by a short cut to first sergeant.

Colonel Meade states in his article, "Promotion of Enlisted Men", in the June number of THE MARINE CORPS GAZETTE that "We should have seventy-five per cent of privates first class in the Corps". I think his point is well taken. Without hoping for any general pay increase in the services, we could nevertheless raise our morale and attract even better recruits to the Corps by holding forth the reward of private first class to deserving privates.

Wherever Marines are in contact with enlisted men of the Navy, the discrepancies between their advancement in pay and ours breed dissatisfaction among our men with consequent lowering of morale. Even the dumbest private grasps all too soon the bluejacket's quick jump from $21.00 to $36.00 a month and the bluejacket's subsequent jump to $54.00 a month while the Marine must pass through a $30.00 and a $42.00 a month grade to get that far, even if fortunate enough to become one of the sergeants in his detachment. Of course, our clothing allowance offsets these discrepancies somewhat, but it is the cash money pushed out to the pay line which counts the heaviest in morale.

I believe that we should make the line company so attractive a prospect that our very best men would seek duty in it—else let us admit that its place in the Corps is secondary. Such an alternative would make it difficult, of course, to teach our personnel that decisions can be effected only by closing with the enemy or that the infantryman with his bayonet must always be the arbiter of the battlefield. At the very least, let us not use up so many men for the maintenance of high power technical and mechanical material, designed for the advanced base missions of some gigantic war of the future that we have no men left for the line company jobs which have faced us in stark reality during the last five years.

I do not suggest that the line has lagged in the matter only of pay and promotion although it certainly has not kept pace with the other elements in those respects. It was announced in the Headquarters Bulletin No. 58 of 15 July, 1930, that thirteen additional master technical sergeants have been allocated Marine Aviation. I am sure that was pleasing news to the Corps at large for our aviation as well as our other auxiliaries commands our respect and admiration. As splendidly as our aviation "put out" in Nicaragua, however, it remained for line companies actually to hold the bandit areas there. Unquestionably the highest skill and the greatest risks are demanded to maintain and to operate their material and such deserves high compensation; yet, concede to the line that its functions involve more risks of life and that no material can have higher value than human life. If it improve any of our elements to allot more ranks in the higher pay grades, surely it is time to try the experiment on line companies, as they have felt only the touch from the sixth pay grade since the gunnery sergeant was allotted to them many years ago.

Let us visualize a new type of company: Of the privates 75 per cent are privates first-class; there are two section sergeants to each platoon with the pay of the third pay grades; gunnery sergeants as platoon sergeants; a sergeant for clerical duty, and the first sergeant is in the first pay grade with promotion to his rank restricted to the list of gunnery sergeants. Would not this scheme appeal to the able and ambitious man—the type who entered the Corps to soldier but shifted to special duty as the only means to get anywhere? It would offer him progress through all the line pay grades with the reward of the first pay grade at the top. It would retain in the company as first sergeant its most experienced and ablest soldier instead of passing him up and out to the grade of sergeant major or paymaster or quartermaster sergeant. And I sincerely believe that the line company, as our most permanent organizations as the unit of which we require in the field so much independent duty and action, as the unit which is the very keystone of the Marine Corps arch, deserves such a break.

But such a panacea for the enlisted man's ills cannot cure all the line company's ailments which are deeply seated. The duty with that company should attract our most enterprising company officers to the degree that healthy rivalry for assignment to it would exist at all times and not be in evidence only at the embarkation on a new expedition. From my own experience and from inquiry among our captains and lieutenants, I find the bulk of distaste for this duty embodied in "no men for drills or training". It is not merely that companies are not kept to authorized

strength—for every one appreciates that this is not always possible—but beyond that, it is the drag of police and guard details which gets the captain down and keeps the lieutenants marking time.

We follow too readily a practice of forming detachments for special jobs by drawing groups of men from a number of organizations. Even in the field the practice pursues us, for I have seen in Nicaragua an outpost of thirty-odd men composed of detachments from seven companies. On the other hand, I have seen companies in the Dominican Republic during a live bandit situation separated into as many as six outposts five or more miles apart; yet company organizations were maintained and the men of various companies were not mixed. We know that an organization under its own officers and non-commissioned officers is more efficient than is an equal or even larger number of men drawn from various sources. As long as we assemble piecemeal the men necessary for specific jobs, we fall short of the efficiency which should be obtained from the total number and, in the meantime, we reduce all organizations by this attrition to the point where we halt their training.

It is no doubt obvious, to those at least who have taken part in our China and Nicaragua expeditions, that we need training. In the World War preparation, we held companies and battalions intact for long periods of intensive drill and schooling which were continued abroad for many months more before they went into action. Of course it may be said that the opposition to overcome in the World War was incomparably more serious than that of a "banana" war thus making anything less than the most thorough training a suicidal policy. On the other hand, if our opponent be admittedly inferior to us in military fitness, the sooner the world at large would expect us to dominate him. In either case, thorough preparation is vital to our prestige, because what the "banana war" opponent may lack in numbers, technique and resolution, he offsets by utilizing fully his ability to fight only upon his own terms.

We sent into Nicaragua, for example, companies which came into existence only upon arrival at the ports of embarkation a few days before sailing. That might not have been bad at all with well trained troops, but these companies were composed mostly of non-commissioned officers who had never led men in the field, and of privates in the first two years of their enlistments, many of whom had not even completed recruit training at Parris Island and San Diego. After shaking down a week or so in Nicaragua, they went into the hills to be split into patrols and outposts. Granting that such experience either makes or breaks the soldier quicker than any other, let us admit at the same time that we cannot follow such procedure and take the situation well in hand without a lot of fumbling. Marines should always be able to clinch at once and pin to the mat any enemy encountered in a banana war.

Prior to 1916, many of our companies were kept intact over considerable periods. In this connection, let me quote the experience of one of our old-timers, Chief Marine Gunner Thomas Quigley, U. S. Marine Corps. Mr. Quigley says:

"The 6th Company was organized at the Marine Barracks, Philadelphia, in June, 1913, from the Marine Detachments of the U. S. S. Montana and Tennessee. Most of the men who formed these ships' detachments came from the Recruit Depot at Philadelphia. They were enlisted during the month of August, 1912, and embarked on these ships in November of the same year. They served in Turkish waters from December, 1912, to May, 1913.

"The 6th Company was trained in Philadelphia as a 3-inch, 50-calibre gun company from its organization until January 2, 1914, when we embarked on the U. S. S. Hancock and participated in the fleet maneuvers at Culebra. We then went to Pensacola and to New Orleans and were held at the latter place, either aboard the Hancock or ashore in the Navy Yard, until April, 1914, when we again embarked on the Hancock and sailed for Tampico and Vera Cruz. At Vera Cruz, we were ashore as a rifle company until December, 1914, when we returned to Philadelphia and were trained there as a 5-inch, 40-calibre gun company.

"Again as a rifle company, we embarked for Haiti on the Tennessee in August, 1915, and served there until April 30, 1916, when we were sent to Santo Domingo on the Prairie. We landed in Santo Domingo and served there until December, 1916.

"About 40 of our men were sent home from Santo Domingo three months overtime, having served practically all their enlistments in this one organization.

"Our company commander was Captain F. M. Wise from the time we were organized in June, 1913, until October, 1916, when Captain Wise was promoted to the rank of major.

"As first sergeant, I assisted in the organization of the 6th Company and I remained its first sergeant until I was promoted to marine gunner, March 31, 1917. The gunnery sergeant was W. O. Corbin who served with me in this company through exactly the same period. Practically all the non-commissioned officers of our original organization remained in the company until they were discharged in October, 1916.

"The first sergeant in those days not only supervised the paper work of the company but also took part personally in all the outside activities of the company. I was always present at every formation. Needless to say, I ran the company when the officers were absent and was strictly responsible for it at such times.

"My base pay and that of the gunnery sergeant was $45.00 a month, the same as the sergeants major and quartermaster sergeants drew at that time."

I have been assured by Mr. Quigley and others of his time that the 6th Company's history is not a special case but that many of our companies had the same permanency of organization through a like variety of experiences.

It is interesting indeed to analyze the supporting factors in that series of brilliant exploits through Vera Cruz—Haiti—Santo Domingo. We cannot but regard with the utmost pride the fact that the **elan** developed in that scant 9,500 so impregnated a mass of 75,000 in less than two years after the Dominican Occupation as to accomplish imperishable deeds in the major war of all time.

Here was the 6th Company, formed mainly from recruits, but recruits who had already served several months aboard ship, certainly service which rapidly develops discipline and smartness. The company was intended as an advanced base unit, but just as we find the situation today, its need as a rifle company

supervened. We cannot but note, however, that it returned to its advanced base training as soon as it had finished its rifle company job. Again, it goes on a rifle company mission. This time, as before, its captain takes it away as a unit. The company serves in three different republics abroad as a unit; approximately forty months with the same captain; approximately forty-five months with the same first sergeant and gunnery sergeant. I believe that in all fairness we can ask ourselves the question, how could that company have failed to be efficient?

It is noteworthy also that its first sergeant was promoted to warrant rank—not to sergeant major or quartermaster sergeant which then was no promotion in respect to pay but today would mean an increase of $42.00 a month. He had every reason to remain forty-five months in the same outfit then. No doubt, the $39.00 a month increase in the pay of first sergeant went a long way toward satisfying a man who had been drawing only $45.00 a month; but that misses the psychological factor entirely, for it isn't the top-notch pay for one who should be a top-notch man.

If we were ever able to approximate such integrity of organization as the 6th Company enjoyed and as did likewise the 4th, 11th, 19th and others of the old 1st Regiment, we should certainly be able to do so again. Then, any scheme which would rotate guard and police by companies so that each could have as much as six weeks annually for range practice and combat exercises with all its weapons, would increase vastly our expeditionary fitness. I am confident, moreover, that there are few company officers in the Corps who would not prize even so short a period of real soldiering so highly that they would gladly endure the dull part of the year to get such a chance.

In what I have said, I have not wished to imply any criticism of any of our component parts, for I believe our faults, whatever they may be, have risen unawares while we looked toward another big war requiring reinforced brigades and divisions instead of patrols and peace strength companies; that the specific faults in our companies are due to a natural result of the rapid development of technical and mechanical factors since 1916.

History shows, however, that no innovation in the military art during the last six thousand years has been able permanently to displace the soldier and his individual weapons and none such is yet in sight. Thus, I suggest that we seek improvement of the line Marine and his company who alone of all the services, arms and branches, may normally expect action in times of national peace.

Col. Breckenridge on Lieut. Comdr. Jeans' Article

Editor, Marine Corps Gazette.

Dear Sir:

I wish to promptly commend the article written by Lieutenant Commander H. S. Jeans, U. S. Navy, entitled *"Field Officers Course At Marine Corps Schools,"* and appearing in the November, 1930, issue of the Gazette.

The author has been inspired by a critical and helpful attitude that is purely constructive. He points out the complications of the course as seen by the student body; and it is well to bear in mind that this body is composed of mature men, all of whom are capable of original thought and inspiration. Many of them, in fact, have proven outstanding in certain lines of professional endeavor, and merely need an opportunity and a channel buoy to guide them into new activities of thought.

This article brings out the earlier trials of the Naval War College, and does so in a way that is appropriate and clarifying. Many of our difficulties seem to be due to similar reasons and causes. In casting our eyes back along the path of Marine Corps educational efforts, those of us who recall some of the earlier Schools can see an improvement that seems to be commensurate with its great effort. We have had Schools because officers were assembled and told to have them. We often lacked trained instructors, equipment, rooms, and time. In fact it sometimes looked as though we had nothing but students, orders to conduct a School, and the desire to do our duty. Expeditions interrupted the courses, and classes were depleted or wiped out. But we carried on; and we have progressed. The Naval War College needed time, and popular recognition, before attaining its present deservedly high place in professional opinion. The Marine Corps Schools also need time, and perseverance; and above all they need helpful criticism such as Mr. Jeans' timely article is inspiring. The officers at this post are cordial in their reception of his remarks.

I think all officers who have commanded the Marine Corps Schools have appreciated the lack of Naval influence in the courses. This situation seems to have been inevitable. The Staff is composed of able and versatile men who have attended many institutions of military learning, where they have absorbed their doctrines and philosophies. Unfortunately too few have had an opportunity to attend the Naval War College; this situation needs time alone in which to correct itself. When Admiral C. F. Hughes was Chief of Naval Operations I carried this problem to him, and explained our inability to inject Naval thought from the Staff of the Schools. I then begged him to *infuse* Naval thought through the class itself. He saw the point instantly, and directed that the number of Naval officers attending the classes be increased. These Naval officers must automatically carry with them their own doctrines and philosophies of service, and sooner or later, in one way or another, they will voice them; and a start is then made. Lieutenant Commander Jeans has done what I had hoped would be done, and what I hope others will do in the future. He has given *Naval* criticism that is helpful, and with which I largely agree. I would like to see this appreciation made publicly in the pages of the Marine Corps Gazette.

Sincerely yours,

J. C. BRECKINRIDGE,
Colonel, U. S. M. C.

Bull Cart Transportation in Bush Warfare

(Continued from page 30)

should be made and neither parade ground nor garrison discipline should be exacted.

When the situation permits, let all or part of your men ride the carts, or let them ride and hike by relays. Often a definite number of men are assigned to accompany each cart, making such relays simple of execution. Never let the men hang their rifles on the carts, riding or walking, as serious damage to the rifles results, and in an emergency the men should have their arms with them.

Inspect all rifles before the day's march commences each day, and permit no loaded rifles unless the route of march is particularly dangerous, the inspection then includes loading and locking. Let your advance and rear guard commanders know your plans and the manner of progress desired. No straggling of men is ever permitted.

If a man struggles half a mile or so through knee deep mud on foot to inform you of an accident or other hold-up in the train, do not bawl him out for failure to salute and stand at attention while making such report. He means no discourtesy and is probably too exhausted to think about anything except his report. Reason can be applied to such matters which will not cheapen an officer in the regard of his men, nor in any way lessen their combat discipline.

The following is a true example of mis-applied military knowledge, which is said to have actually happened in the bandit area in Nicaragua: A newly commissioned second lieutenant who had just arrived from the U. S. after graduating from the Basic School at Philadelphia, had at that school been forcibly impressed by the instructors in Naval Law and Administration that summary punishment of enlisted offenders within a command was essential to proper military discipline and as an example to other members of the command. This lieutenant was ordered to proceed without delay by marching with a large patrol to occupy and defend a small ungarrisoned native town, about fifty miles distant from his regular station, that apparently reliable reports indicated would soon be raided by bandits. While enroute one of his men assaulted an inoffensive native. He immediately went into camp, held office hours on this offender, awarded him three days' solitary confinement on bread and water, and camped right there for three days while this man served his sentence.

An Emergency Hike With Bull Carts

About the middle of May, 1927, reliable reports indicated that there were several rebels in the vicinity of Somotillo, Nicaragua, who had had no opportunity of surrendering their arms for payment as provided by the Stimson-Moncada Agreement. The time limit for such surrender of arms had been set as June 5, 1927.

Chinandega was the closest garrison to Somotillo and was ordered by the Admiral to send one company to that place to receive these arms and patrol the Honduranian border. Due to the short time available prior to June 5th, this detail had to clear as soon as possible. Road conditions were bad and the weather was rainy. All possible speed would be required in this movement in order to arrive at Somotillo in time to accomplish the mission.

The Naval officer in command at Chinandega ordered a new Marine company, just arrived from the states forty-eight hours before, to make this trip, with 127 men, three officers and 22 bull carts. None of the officers of this company had had any previous experience with bull cart transportation. The orders for this trip were received by the company commander at noon of the day prior to scheduled departure.

The rainy season had set in. Somotillo was about 55 miles distant by the regular road, but later it was discovered that a detour of 10 miles had to be made because the only bridge on the regular road had been destroyed. No information was available from the commanding officer as to road conditions or the route to be followed. There were five swollen rivers to ford, no mounts were to be furnished for any members of the convoy, no money was available for open purchases of fresh meats and vegetables. No medical corps personnel had been provided for the trip or for the station at Somotillo, and although the main mission of this movement was to accept by payment native arms surrendered by rebels, no money for payment had been provided. Upon inquiry, the company commander was instructed to give due bills, payable at Chinandega, to all men surrendering arms, on which they could collect ten dollars per rifle by struggling 55 miles through the mud to Chinandega, providing they had sufficient confidence in our good faith to show up in Chinandega unarmed to collect their money.

The twenty-two carts were ordered to carry 30 days' rations for the entire command, plus road rations for the return escort of the empty train, all company property and men's sea bags. This could only be done by loading all carts to the maximum and then leaving behind considerable company property such as the rolling kitchen, tin hats, and all but three tents. To make the situation perfectly impossible, only one yoke of oxen was to be allowed for each cart.

This is the situation that faced the company commander, practically without notice, and with only twenty hours to prepare for the trip and get under way. The orders were actually issued on Sunday at noon and the trip had to commence at 8:30 a.m. Monday. No excuses would be accepted for a delayed departure. This company had arrived in Nicaragua the previous Saturday morning, had unloaded stores all day Saturday and arrived at Chinandega about dark the same night. It had spent Saturday night on outpost duty, ten miles from Chinandega, at which outposts the men had not arrived until after midnight Saturday. After about four hours sleep, for those not on post, the entire company was ordered back into Chinandega Sunday morning and then for the first time given information, at noon, as to clearing for Somotillo the next morning. This in spite of the fact that orders for the Somotillo trip had been in possession of the naval commanding officer at Chinandega when the company was sent to outpost duty the night before.

This is a good example of poor staff work, as the Naval personnel that this Marine company relieved on outpost duty Saturday night, were sent out again to relieve the Marines on Sunday morning. This amounted to useless expense to the Government for hauling, and the actual overworking of already tired

troops, which troops were to be used immediately for the most strenuous sort of field duty.

The company commander was actually ordered to take over one hundred men, through 55 miles of unknown country, by unknown trails, with twenty-two heavily loaded bull carts, to garrison an unknown town for an indefinite period, without medical personnel of any kind, mounts, money for open purchase of rations, funds for payment of surrendered arms, in the rainy season through roads of the worst sort imaginable, swollen streams to cross by fording, and only one yoke of medium class oxen to each cart.

Put yourself in this company commander's place; take a few minutes to think the situation over, then try to decide what to do. Just to complete the picture however, consider that there was no railroad, telephone, telegraph, or radio communication between Chinandega and Somotillo, or intermediate points. Drop messages from airplanes and panel replies, were the only means of communication between this column and its base, after the trip was once commenced.

No information was available as to whether these armed rebels in and around Somotillo would forcibly oppose this garrisoning of their headquarters; no one seemed to know accurately the attitude of the civilian population, except that it was 100 per cent friendly to the rebels.

The company commander, by careful inquiry, located a reliable native guide, but as no Government funds of any description were available, the company commander fully expected to pay this guide from his personal funds and submit a claim later to proper authorities. By telephoning to Managua, orders were procured authorizing the officer in charge of the arms surrendered at Chinandega to transfer one thousand dollars arms money to the C. O. of the Somotillo garrison, at once. By wiring to Leon, medical supplies and two pharmacist's mates were procured by rail just thirty minutes before the column cleared Chinandega. Six mounts were procured by personally begging them from other Marine officers in Chinandega. By pure luck, the Marine paymaster passed through Chinandega a few minutes before 8:30 a.m. on Monday, the day of departure, and he advanced this company commander five hundred dollars paymaster's funds, to be used for open purchase of fresh meats and vegetables, and took the responsibility of later making this money transfer with the Marine regimental quartermaster, who as yet had no funds on hand.

No more oxen could be procured prior to departure from Chinandega as the Naval commander was adamant on the subject of increased number of oxen, although all expenses of the trip were being paid eventually from Marine Corps funds.

The column cleared Chinandega at 8:30 a.m. as ordered, and by great effort and relaying of oxen in the bad places, managed to arrive at a camp site, five miles from town, but out of sight behind a hill, by 11 a.m. the same day, where camp for the night was at once made.

The company commander now decided to disregard all prior instructions except his mission, as he was now in the field.

It was perfectly evident that with the present number of oxen the train would never reach Somotillo and he at once despatched all native cart drivers back to Chinandega and vicinity to procure all possible spare oxen. They reported back with twelve new oxen; this allowed the six poorest carts to start the next day's trip with four oxen to the cart.

At every ranch passed enroute, all oxen encountered were peaceably hired or commandeered. In addition, four self-confessed cowboys from among the Marines were mounted and sent ahead of the column with ropes, to pick up all stray oxen encountered along the trail. By these methods, the column arrived intact at Somotillo ten days after departure from Chinandega, but the original forty-four oxen had increased to ninety-six.

Later when asked by his regimental commander where these extra oxen came from, the company commander explained that due to rebel activity and civil war, the country passed through was practically deserted, and that every oxen met along the trail, that had ever been broken to work, forced themselves into the column, trying to crowd themselves into working position in front of the carts, until their interference hampered the progress of the column to such an extent that they simply had to be hitched to the carts. The colonel with a serious face but a twinkle in his eye stated that he could readily understand how such a thing might happen. Nothing more was ever said on the subject, except that the company commander later received a letter of commendation.

Due to the refusal of friendly natives to accept pay for hire of their oxen, and inability to locate the owners of others, all these extra oxen cost the Government a total of only thirty dollars. By having the empty bull cart train, on its return trip, restore all spare oxen to their owners or turn them loose in the locality from which procured, the friendship and cooperation of all native owners was fostered and maintained.

All natives encountered on the trip to Somotillo were given handbills in Spanish explaining all details of payment for surrender of arms, and that the company commander of the bull cart train had funds with which to pay for all arms surrendered to him at Somotillo, any time after his arrival there and prior to June 5th.

Within thirty minutes after the first cart reached Somotillo, forty-five rebels with rifles, including one "General" and two "Colonels", surrendered their arms and received payment for them. Every day until June 5th, more arms dribbled in in lots of twos and threes, until over one hundred rifles had been so received and paid for.

This successful disarmament resulted in the Somotillo sector remaining comparatively quiet for many months, until armed bands of bandits from the Northern Area of Nicaragua moved down that way, for a respite and to run arms and ammunition across the border from Honduras. However, this phase is a story in itself and was directly caused by the small sized garrison in and around Somotillo, and the partially unprotected Honduranian frontier which resulted therefrom.

Remember these rules: Do not overload your carts; distribute the cargo fairly between all available carts and let the native driver load his cart as he sees fit; keep your poorest carts at the head of your column if a closed-up train is desired on the march; if possible have a chief cart driver with each train; treat all natives fairly without letting them impose on you; have a reliable native guide unless the road is well

known to you; when streams are to be forded distribute your perishable cargo as a top layer on each cart, when carts are to cross loaded; and lastly, do not volunteer for duty with a bull cart train with the idea that it is going to be a grand adventure, as it requires the patience of a saint, the endurance of a prize fighter and is usually a thankless task no matter how well accomplished.

Books of Interest to Marines

(Continued from page 43)

called it a "Eulogy", implying that the praise was overwrought; but perhaps the book is intended to be just that, and if so is not the thought justified by the recorded events of General Stuart's life experiences during the stirring days of the four years of internecine strife which history styles the Civil War?

The answer to this question was made by a great general many years before the question was asked, for it is recorded that General Robert E. Lee, than whom our country has produced none greater in military prowess and judgment, said:

"General Stuart was my ideal of a soldier. He was always cheerful under all circumstances, and always ready for any work, and always reliable. When he stopped for a night's rest, he could throw himself on the ground, and, with his saddle or a log for a pillow, he would fall asleep almost immediately and sleep as if in a bed. Then, if I sent an officer with an order, he was awake at the first call or touch. When his eyes opened his mind became fully awake. Before any other officer that I ever had could get himself and his men awake, Stuart would be in the saddle, have his men in line and be ready to move".

As a result of a careful perusal of the book and consideration of its contents in comparison with many other books treating of those momentous years it is a pleasure and a duty to recommend it to the officer who would increase his knowledge of the historical events of the Civil War and at the same time add to his military lore in the line of the technique of the horse soldier. Likewise it is easy to recommend the book to the layman who would add to his historical store of knowledge or who might wish to pass some pleasant hours of entertainment in reading this saga of a great warior.

BOOKS

Members of the Marine Corps Association can save time and money by ordering their books through the Association. Address all communications on this subject to Business Office, Marine Corps Gazette, Room 502, Evans Bldg., Washington, D. C.

Use of Gas in Minor Warfare

(Continued from page 25)

whose limbs were torn off by the "humane" weapons are there who do not envy the recovered victim of gas who now enjoys the full use of his arms and legs?

Those who were responsible for our wartime propaganda against gas as a German atrocity did their work well. The mere mention of gas will horrify many thousands of good people who are firmly convinced that this iniquitous and barbaric method of warfare was an invention of the Devil placed in the hands of the unscrupulous Prussian militarists for his evil glorification. If any one dare suggest that we shall use such stuff in future he will bring down upon himself tons of opprobrium from these well meaning dupes of the poison pen. Firm in their credulity, or at least unwilling to admit they have been duped, these people constitute an element which must be combated in the effort to bring this important subject into the light of truth; and out of the realm of weird imagery and ignorant taboo.

The plain fact is that all civilized countries are engaged in organizing their offensive and defensive measures for chemical warfare. Only a moron or an ostrich could fail to acknowledge this fact. Take Russia, for example, since we may speak of her with frankness for the present. The Russian government is conducting a thorough program of universal instruction in the art of gas defense. Men, women and children are taught the use of the mask, the value of protective measures. You may draw your own conclusions from this. Personally, it seems that the Russians are more intelligent and more humane than those who self-righteously taboo the subject. In Hannibal's time the ancient Roman mothers used to scare their children by saying, "Hush, for Hannibal is at the gates, and if he hears you he'll get you." If they had only handed the youngster a good-sized rock or a spear and told him to go out and heave it at Hannibal, the latter might not have stayed for fourteen years on the Italian peninsula. What are we going to do? Shall we buy the young idea a gas mask, or tell him to hush?

Believe it or not, there was a time when the familiar implements of today's warfare, guns and such things, were regarded with the same disgust and animosity that we now apply to gas. The armored knights of another dark age looked with the same horror upon gunpowder (an atrocious chemical, by the way.) And well they might, for it was gunpowder which literally and otherwise brought them off their high horses. And so unethically, too! There was a time, too, a more recent time, when machine guns were not so plentiful among the lesser nations on this continent. But times do change, and unless we adjust ourselves to these changes, we perish.

Let me throw this little drama on the screen for you. It will seem familiar to most of us. There is a small body of Marines holding the bag out in the hills. It is a small, obscure little village in a semi-civilized country where machetes still rule. Threatened by an overwhelming force, the Marines are just sitting tight and hoping for the best. The natives outside are a poorly armed, badly organized lot of ignorami whose emotions have been aroused by their political chiefs for their own ends. The chiefs want

blood. If it chances to be ours, they become popular and are counted successful. If it be theirs, the United States is accused of barbaric conduct, and certain sections of the press ring with the story of the "martyrs". How are we going to get around this business?

Until recently, this is the general method of procedure: The officer in command, seeing the threatening advance of the enemy, orders a volley fired over their heads. No casualties resulting, the enemy continues to approach. Another high volley is fired. The bandits encouraged by the seeming ineffectiveness of our fire, commence their rush. The officer in command then gives the word to let them have it. Automatics, machine guns, and rifles, the "humane weapons" of today, spit out their messages of death. A few limp bundles of rags are left on the field. Others are seen crawling off to the bush as fire ceases. The rest scatter pell mell. The argument has been settled by the "humane weapons".

The local effects are not so serious. We have killed a few ragged wretches whose instinct of self preservation was temporarily lulled by speeches and rum. The bodies on the field are counted. Some of them crawled off into the bush to die and their bodies were not counted. Our authority has been maintained. Our prestige is restored, after a fashion. The clash has cleared the atmosphere for the moment. There are few who will dispute the question of who is the boss.

But in a larger sense, did not the native chiefs have their own way after all? They arranged this party for their own purposes. By forcing us, however unwillingly, to kill a handful of half-naked devils, they have made these same half-naked devils into martyrs. "Martyrs of the cause of liberty, struggling against the cruel imperialism of the Colossus of the North" is the way the thing runs. If you don't believe it, just pick up any Latin American paper on the subject. And to make matters worse, these outbursts find a sympathetic echo in our own press.

When you consider that we were actually only firing in defense of our own lives, against a savage rabble which was perfectly capable of the most hideous atrocity (as witness the manner in which isolated members of the Corps have met their deaths in these same places). And when you consider further, that we are there under orders over which we have no control, it does seem like a pretty rotten break to be placed in the position of defending ourselves before the nation. That is what happens when we use the approved "humane" weapons. And the loudest in their condemnations are the very persons who object to gas as an atrocity peculiar to bellicose Teutons.

Let us retake this scene again, now, since the results were highly unsatisfactory. Advice to the contrary notwithstanding, let us have the temerity to use a little gas and smoke. Everything is as it was before. The same little handful of Marines, in the same little town somewhere east of nowhere, are doing the same old job—holding the bag. The same bandits, Cacos, or what have you, are being urged to a rash assault by their unscrupulous leaders. Everything is the same up to this point. But from here on watch carefully, for we are going to be very, very barbarous. We have got our maching guns put up in curl papers and cosmoline; we are going to eschew the "humane" weapons of civilized war.

The bandits attack with more or less elan, according to their stock of rum. On they come. No volleys this time. Nothing happens until the proper moment. And then, by simple, well-known means, we let loose among them a quantity of "tear gas" and "sneeze gas." The charge of the dark brigade into the valley of death becomes curiously like a comedy reel. Prospective heroes and martyrs drop their weapons and become victims of uncontrollable weeping, sneezing, and vomitting. Death, unless some of them die of fright, is not asked to this party. It takes its old scythe over into a corner and sits down to hold its bony sides in a rattle of laughter. Unless some of them get scratched up in their escape through thorns and cactus, there has been no blood shed.

The local, immediate results are violent and decisive. The revolt at that place is definitely finished. Our authority is maintained, our prestige is enhanced by the use of "devil gas" which caused the brave heroes to weep like women and vomit like the seasick. Out in the hills, 15 years ago the machine gun was a "devil gun," and the prestige of its possessor was absolute. Today we find many devil guns have made their appearance among the lesser nations. How they get them is a story that would make interesting reading. The fact is that they have them, and that they are no longer feared. Their prestige has declined. In the course of time they will have "devil gas" too. In the meantime, let us make hay.

As to the press and the public, they can hardly be expected to quarrel with the latest version of our little plot. One is thrilled, filled with beautiful, liberal, and patriotic sentiment if the poor heroes were cruelly shot down by the brutal Marines. But one can hardly muster such sensational emotion for headlines that would read something like this: "Rebel Rabble Routed With Tears and Tummy-aches."

The Marines Have Landed

Who first sent in that famous dispatch—"The Marines have landed and have the situation well in hand"? No one knows or at least no one has yet disclosed. The Honolulu Advertiser of November 10, 1926, carries this paragraph:

" 'The American Marines have landed and have the situation well in hand!' That is an American tradition now. Tradition in the sense that it inspires everybody to do their best. Richard Harding Davis always gave the Marines their rightful share of publicity but little did he know what a slogan he coined for them."

The above would appear that Richard Harding Davis was responsible for the historic phrase. Some have laid its beginning in the year at Panama when the Marines were down there in 1885 and the British Consul or somebody else said something; but there seems to be no foundation for that claim.

So maybe it can be hung onto the RHD.

Watch for the May Gazette. It will contain more than sixteen articles of professional value.

Three Historic Withdrawals from Overseas Operations

By MAJOR EDWIN NORTH McCLELLAN, U. S. M. C.

TWENTY-EIGHT American Marines and Bluejackets under Captain John Trevett of the Marines made a forced landing from the sloop-of-war *Providence,* at New Providence in the Bahamas Islands on January 27, 1778, and by strategy occupied the forts.

By two o'clock in the morning the Americans had Fort Nassau in their possession. Captain Trevett kept their presence unknown to the Governor by continuing the half-hourly call of "All Is Well."

Marching from one point to another inside the fort at regular intervals, with the music blaring forth martial notes, the Americans created the belief in the town that they were more numerous than they were. Captain Trevett also requested an old Newport friend living in town to visit him and sent him back to the town with information that he had two hundred and fifty Marines in the fort and that Biddle's fleet was off Abaco. The other fort four miles away was also occupied; her guns spiked and the fort abandoned. About two o'clock in the afternoon a British privateer arrived. She landed a force and prepared to retake the fort.

Captain Trevett made a prompt decision to withdraw to the *Providence.* Nailed the Stars and Stripes to the pole and threatened to bombard the town. That gave the Americans time to carry out their plans.

That night all hands were busy getting the ammunition and war stores on board *Providence.* Spiked the guns. One ship and a brig had been captured, two American schooners and thirty American prisoners released, two forts dismantled, "all without any blood being shed."

DERNE (TRIPOLI), 1805—

Probably no war in which the United States has been engaged illustrates so well, as does the Tripolitan War, the desirability of having an "expeditionary force" of Marines immediately available with the fleet.

Dale's squadron went out and thundered ineffectively at the Bashaw's forts. Then Morris, and next Rodgers, but still the Bashaw was imperturbably adamant to either bombardments of lead or ransoms—offers of gold.

Then the *Philadelphia* was captured by the Tripolitans. And burned by Decatur, his heroic party including eight Marines; but the Bashaw refused to ransom the officers, Bluejackets and Marines of the *Philadelphia.*

Barron next led a naval array against Tripoli. Again the Bashaw was unmoved.

All the vessels of the Navy sent out and all the guns of the Navy that spewed forth death, destruction and desolation, and all the strategy and bribes of ransom had failed to "crack the Tripolitan nut." At last an "expeditionary force" partially composed of Marines (under O'Bannon) forced the Bashaw to consider terms and caused him to sign a treaty.

If there originally had been an organized "expeditionary force" attached to the first squadron, events might have been expedited; but during this period there was a total of about four hundred Marines in the Corps.

General William Eaton, Navy agent for the Barbary Regencies, conceived the plan of restoring Hamet Caramelli, who had been deposed by his brother as Bashaw of Tripoli. He gathered together an expedition at Arab's Tower, about 40 miles west of Alexandria, Egypt. In it were seven Marines under Lieutenant O'Bannon, three other Americans, and about five hundred foreigners. Hamet was along.

They marched many miles across north Africa and captured Derne. Two Marines were killed and two wounded. This forced Bashaw Yusuf to sign a treaty.

The *Constellation* arrived at Derne on the 11th with orders for Eaton to evacuate. To avoid unnecessary inconvenience it was decided to withdraw the forces secretly. Eaton, therefore, ordered the usual routine to be carried out. At 8:00 p.m., he "placed patrols of Marines to stop intercourse between the town and" the "post, as usual." Then the cannoniers embarked, and next the Greek company. "The Marines remained at their posts." Hamet and his retinue went aboard. "The Marines followed the American officers with Eaton the last to abandon Derne." All were on board the *Constellation* by 2:00 a.m., June 12th.

The United States Government carefully provided for the future of Hamet but his countrymen and others who had helped him and the United States either fled to the desert or perished.

SAN PEDRO, CALIFORNIA, 1847—

Captain Archibald H. Gillespie had occupied Los Angeles acting under orders of Commodore Stockton, the Commander-in-Chief. From September 23 to 30, 1847, Gillespie was beseiged by a force of six hundred Californians.

On the afternoon of the 29th of September preparations were made for the march to San Pedro. Just at dark prisoners were exchanged, which added twelve to Gillespie's force. He wrote:

"On the 30th at 10 o'clock we were ready to march, every rifle being in the best condition possible. Our guns were carefully loaded, our matches lit and everything prepared for action, each man determined to do his duty in the event of treachery upon the part of the Californians. We finally marched through town," a United States force of 73 "including servants and camp followers," we marched "past the Californians six hundred strong with our flag flying and without leaving behind us any property of any value to its insulting enemy."

"At sunset we arrived within sight of the anchorage at San Pedro, where we finally encamped about 8 o'clock."

Here Gillespie learned that the Californians had intended to break the treaty and "cut me to pieces upon the plains" but "seeing me prepared their courage failed them, and my small force encamped in safety."

It was necessary to put water and beef on the *Vandalia.* There were no wells in San Pedro. Gillespie took a strong position at the house of David Alexander. Loopholed and barricaded it.

"I held a council of the officers, which was of the opinion, that no confidence whatever could be placed in

the enemy, and that we could not feel justified in letting the artillery fall into their hands, as we had every reason to believe, it would be turned upon us whilst embarking," reported Gillespie. "It was therefore decided, that we should quietly embark that night, spike the guns upon the beach, and quietly go abroad the *Vandalia,* Captain Everett having informed me that we could get water and bullocks at the island of Catalina, thirty miles distant in front of San Pedro. I sent a note in reply to Flores, saying I would embark by sunrise next morning."

"At about sunset the enemy, about three hundred strong, moved down upon the plain to within half a mile of my line of sentinels."

"During the afternoon I had sent on board of ship all the baggage, and at 8 o'clock at night the boats were at the beach to take off my small party, which, however, were found too numerous for the boats, three in number, to embark at once. Consequently I determined to send to a small island of rocks half a mile distant from the beach, twenty of the party including servants and camp followers, the ship lying too far out to risk the delay of putting them on board and returning."

"We stood by our guns half an hour, when the boats returned, my men were soon in them. I saw the spikes pointed and descended the hill to regulate the boats, leaving Dr. Gilchrist with the blacksmith to drive them home. The sentinels were withdrawn, the smith's hammer fell silently upon the guns, every man was in the boats, I stepped in and pushed off, and by 10 o'clock our whole force was in safety on board the *Vandalia."*

Andrew Mealey and the Mongoose

(Continued from page 41)

animals aboard ship he soon developed a fondness for tobacco and always went after it but he could understand that the bowl of a lighted pipe was too hot to handle. He would sit upright on my lap when I'd be smoking and reach with his paws for the pipe end, and, of course, get them burned; then he would shake them and rub them on his stomach and make a grunting noise that sounded a lot like 'ouch!' He was a great hand for going through your pockets and checking up on what was in them. He quickly came to know the articles usually to be found in each pocket and any new thing was immediately fished out to be examined.

"His fur was much like a grey squirrel's, he had a bulky tail and his face was black and shaped like that of a fox. His hands were small and like a person's and were always cool, the nails being exactly like my own.

"Well, I took my pet back to the 'Monongahela' and he soon became a fixture in the ship's company. He slept in the ship's armory, where they kept the crew's rifles covered with grease—they thought small arms belonged to the Marines and didn't want any bother with them; especially did they dislike the Manual of Arms. The armory was next to the Captain's pantry; maybe that's why Flit, as we named the mongoose, liked it, for he made up to the Captain's cook right away. The armorer was a fine old sailor-man named Doughty who sat on his box and read the Bible when not at work. He petted and spoiled Flit, as did most of the crew. This old salt had been to sea since boyhood and entered the Navy when middle aged. He had a home somewhere on the coast of Maine and liked to talk about his wife and their cottage and the flowers that bloomed there in the summer time. I remember him now, when he was paid off at New York, going down the gangplank with his black bag on his shoulder and on his way back to that cottage and his wife. I bet the Bible was stowed handy in the bag and that he fished it out as soon as he got settled on the train.

"Well, to get back to the mongoose:

"All went well until Andrew Mealy resented his presence on the quarterdeck and flipped him with a broom. It if wasn't for 'Flit' I'm sure that I'd never have remembered Andrew's name, for he was not a conspicuous member of the crew until the mongoose brought him into the limelight. Andrew was a small crabbed Mick and not very bright. His billet was that of sweeper of the afterguard and four times a day he was piped to dust off the quarterdeck—not much of a job for a seaman, but about all Andrew could get away with. He usually went barefoot and was a careful sweeper, for the skipper would scalp him if a particle of dirt was left after his ministrations.

" 'Flit', up to his meeting with Andrew, had never received anything but kindness and petting from human beings—it's only their just deserts when you consider that odd trait that makes the mongoose a friend of man and an implacable enemy of reptiles.

"Well, Mealy was doing his chore when he ran into my pet and seeing no reason for his being on the quarterdeck, took a swipe at him with his broom—it was not such a swipe as could be put down as an invitation to play but a hostile one. 'Flit' so sized it up and put Andrew down as some sort of new specimen, instantly he was full of fight—and nothing is too formidable for a mongoose to tackle when it sees red. The moment Andrew Mealy turned away the little fellow nipped him in the bare ankle and Andrew howled. He went for the animal with a broom but he might as well have tried to hit a dancing shadow—and from that moment war was declared between the two. Although Andrew tried every known precaution to protect himself and every stratagem to slay his enemy, he spent most of the next four months in the sick bay.

"We got a lot of amusement out of the contest at first; it was a sight to see 'Flit' dance around him and Andrew howling and threshing his broom about in his vain endeavor to hit and drive him away. The mongoose moves like lightning and from a stand can spring six feet in any direction without apparent effort. After Andrew Mealy had been bitten in the Cord Achilles a couple of times and was laid up in the sick bay, I tied 'Flit' to a stanchion when I brought him on deck. He would be perfectly contented until his enemy would appear with his broom and then he would rave. Now and then he'd get loose and Andrew would lose another battle and retire to the sick bay.

"We all became very much attached to 'Flit,' for he never showed any viciousness except to Andrew Mealy, and when he died there was genuine sorrow aboard ship. I had been warned about the chance of losing him if we brought him North in the winter and I took every precaution to keep him from catching cold but it was no go. The first touch of frost was too much for him; off Hatteras he died very quickly of pneumonia, his little human hands holding one of mine."

The Temporary Defense of a Fleet Base

(Continued from page 12)

Dewey with the U. S. Asiatic Squadron in the neutral harbor of Hong Kong, six hundred miles from the Spanish Eastern Squadron, assembled in the harbor of Manila, the position flanked by the land batteries at Manila and Cavite.

With characteristic decision Commodore Dewey ran the defenses at the entrance to Manila Bay at night and as the dawn broke on the following morning he led his ships to the sudden attack of the Spanish Squadron with such skill and ardor that "before breakfast" the Spanish ships were aground in shoal water off their naval arsenal at Cavite and fiercely burning to destruction.

In this Spanish naval arsenal at Cavite the American admiral found ready to hand a naval advanced base for his ships during the period of waiting for the army forces required for the occupation of Manila, the capital city of the Philippine Islands.

Had it been necessary for the American Squadron to spend some time in the blockade of Manila Bay prior to the actual naval action which would decide the issue, a base for such operations would have been required and might have been found at Subic Bay, conveniently located for the purpose, hard by to the northward. Such a contingency was in the thoughts of Admiral Dewey when he sent the U. S. S. Baltimore into Subic Bay to reconnoitre on the day before the battle.

The U. S. Asiatic Squadron had no Marines with it except the regular Marine Detachments of the several ships and these detachments formed a part of the regular ships' crews and could ill be spared for landing operations at a selected shore base before the battle, though after the destruction of the Spanish naval force in the east they were so used at Cavite.

If the Spanish batteries at Corregidor, El Fraile and Caballo Island and the mines at the Boca Chica and Boca Grande had been of sufficient strength to prevent the immediate entrance of the American Squadron into Manila Bay it would have been necessary for the American attacking force to conduct a blockade of these entrances as a preparatory operation to the final accomplishment of the mission, which was tersely stated in the orders from the Government at Washington to Commodore Dewey, "you must capture or destroy the Spanish ships." This would have made the seizure of an advanced base mandatory and had Spain's remaining ships from home gone through the Suez, as they later threatened to do when it was too late, it would have been necessary to protect the selected base by means of mines and shore batteries, and these defenses would have required a considerable force to man them. Thus, before the decisive naval action could have been fought the already short crews of the ships would have been depleted by the men landed for the defenses of the temporary base, since the squadron was too far from home to secure a sufficient number from that source.

After the Spanish-American War was long past Admiral Dewey stated to the author of this paper that in the days when he was steaming from Hong Kong across the China Sea to seek action with the Spanish ships he keenly felt the absence of a sufficient landing force for the conduct of preparatory operations that might be forced upon him by circumstances as he should find them as he neared the shores of Luzon and the entrance to Manila Bay. "Fortune favors the brave" and the fact that the quick action of Commodore Dewey in entering the bay without hesitation and at once attacking the enemy ships made the seizure of a preliminary base unnecessary, but after the naval action ended in victory for the American force, the Spanish high authority at Manila offered to surrender the city to Admiral Dewey. This he could not accept since he did not have sufficient landing forces which could be spared from his ships' crews to properly police Manila after the acceptance of the surrender. This fact required a tedious wait of weeks until land forces could be sent from the United States across the Pacific to occupy the city of Manila following its surrender.

The experiences of the Spanish-American War brought it sharply home to the officials and people of the United States that the long period of peace between the close of the Civil War and the opening of the Spanish-American War had lulled them into a feeling of security which was not justified by actual facts and which had led them to neglect proper preparation for the defense of the country should some strong power be moved to declare war upon us. Among other lessons of this war the naval authorities recognized that the growing Fleet was not ready to conduct extensive operations overseas with the best prospects of success should such a course of action be forced upon us. The lack of fueling and supply stations overseas on the routes that the Fleet would follow in such an expedition and the fact that the modern ships could not keep the sea indefinitely without recourse to some protected base for refuelling and refitting was not the least of our shortcomings.

The Navy and the Army alike saw the serious lack of a General Staff to coordinate the efforts of the naval and military forces in preparation for active service and to determine plans for the use of such forces in time of war that might come without warning. This defect was gradually remedied between the close of the war with Spain and the opening of the World War and when we were forced to enter that great conflict as belligerents the event found us much better prepared as to staff work and plan making bodies, but not so well prepared to raise the forces required for a maximum effort at war making and the proper training of the naval and military forces required for such an effort. Thanks to the fact that the British Navy had swept the German cruisers from the open sea and practically bottled up the German battle fleet in her North Sea ports prior to our entry into the war, our navy had only the German submarine menace to contend with, and thus our naval effort was reduced to an anti-submarine offensive and the protection of a large number of transports engaged under naval control in "putting the Army over" the Atlantic to the scene of the major conflict in Western Europe.

It is scarcely within the range of probability that another maximum effort war, should it unfortunately come upon us, will produce such favorable conditions for us, and the experience in the World War is no criterion for the plans for a future emergency.

When the General Board of the Navy, which was organized soon after the war with Spain in 1898 to

take up the study of naval policies and planning, began the preparation of plans for the organization, training and preparation of the Fleet for active service, it soon became evident that wherever the modern Fleet should go in active service under war conditions away from its home bases, temporary bases of some sort would be required. As we have seen it is not practicable for any nation to have such outlying bases scattered conveniently over the world and as it would be impracticable to keep such bases defended even if they could be provided, and the problem soon reduced itself to a question of seizing such temporary bases at some suitable locations on or near the enemy coast and rapidly putting them in a state of defense to meet probable enemy attacks.

It may not be a difficult thing to seize such sites from most foreign countries in time of war since no country can have all of its islands and harbors adequately defended, but it is quite another thing to hold such bases against enemy counter attacks. The same experience has come to other great naval powers embarking upon aggressive naval warfare, thus in the Russo-Japanese War the latter nation soon discovered that a naval force conducting a vigorous offensive at any considerable distance from its home bases must, as they expressed it, "carry its base with it," or in other words advance its bases for the fleet into the enemy territory. As a result we find Admiral Togo's fleet with its advanced base in the Elliott Islands, within striking distance of the strongly fortified Russian port of Port Arthur and the ships sheltered by these defenses. This base in the Elliott Islands was defended by mines and torpedo craft and as a counter effort to meet the attacks of Russian cruiser raids it was provided with some gun defenses mounted on shore and manned by naval personnel.

At the beginning of the World War the German naval forces outside of the North Sea area were forced to seek bases as best they might in foreign ports or harbors. Thus the German ships in the Mediterranean ran the gauntlet of the British ships in that area and entered the Dardanelles back of the land battery defenses of her ally, Turkey, where their presence actually served to bolster up the spirits of the Turks and also constituted a threat against the Russian naval force in the Black Sea. The other German Squadron at large were not so fortunate, but for a time they occupied the attention of a considerably larger force of the British Navy and accounted for the destruction of a number of British ships before they met their final defeat at the hands of the superior British Squadrons.

But the World War was not an overseas effort on the part of Germany; her chief foes were situated on either side of her own country with long contiguous borders and the main effort was bound to be one of land warfare by invasion, yet had her Navy been equal or superior to the British Fleet at the beginning of the war the story would have been different, for here as in other wars it was seapower that was the deciding factor. The wonderful development of the submarine as a comparatively new weapon by the Germans came near to turning the tide in her favor and it required the added force of the United States to scotch this last great sea effort of the Germans and to make the final victory of the Allies possible.

However, we can not count upon some friendly ally to meet and defeat the enemy naval effort before our entry in some future war, and, profiting from the lessons of the wars of the past, we must so lay our plans as to meet such an enemy unaided by the assistance of allies.

For example, when we acquired a vast archipelago in the Pacific at a great distance from our home bases as a result of the Spanish-American War we took upon ourselves quite new responsibilities and liabilities, the responsibilities for the rule, guidance and tutelage of an alien race, and the liabilities incurred in the protection of these new possessions from the attacks of some strong power that might for reasons which would justify such acts in their own minds attempt to conquer them. The first plan was to fortify and defend the Philippine Islands against possible attack by an enemy force, but the Limitation of Naval Armaments Treaty of 1921 effectually stopped further developments of such land defenses and left the problem one of naval defense, where in any event it would ultimately find itself, for overseas fortified points can not hold out indefinitely against hostile attacks in force without active naval support.

Should some great power attempt to wrest the control of the Philippine Islands from the United States, an interesting naval campaign would undoubtedly develop involving the movement of the U. S. Fleet across the wide Pacific in the face of an enemy fleet and the relief of the beleaguered islands six thousand miles away.

Whatever the route selected for the movement of the relieving armada, whether via the Panama Canal or otherwise as dictated by necessity, the problem for the Fleet would be the same in broad terms:—to search out the enemy main fleet and defeat it and thus gain command of the sea route from the United States across the Pacific to the islands in order that a large land force might be transported oversea for the relief or reconquest of this territory. Such a naval movement overseas would constitute a maximum effort for the Fleet and it may be assumed that before the Fleet could arrive in Philippine waters the enemy would have captured or closely blockaded the fortified ports in the islands, and that Guam would be in the same condition, with the Hawaiian defenses still controlled by the United States. Such conditions would require the Fleet to establish additional temporary advanced bases west of Hawaii along the route across the Pacific and within striking distance of the enemy naval forces in and near the Philippine Islands.

This would have to be accomplished before any major naval engagement with the hostile fleet; and would involve the use of a considerable force to accompany the Fleet in transports for this duty since it would not be practicable to deplete the crews of fighting ships of their trianed crews for use as a landing force.

The substitution of oil for coal as the principal fuel for U. S. naval ships has to some extent improved the situation for it has increased the steaming radii of the ships and made it possible for them to operate at a greater distance from their bases; but the development of two additional defensive and offensive arms to the naval establishment has added further complications to the problem. These two additions consist of, first, the submarines operating beneath the sea, and, second, the aircraft, operating above the surface of the sea, thus making a "three dimension" problem of what was formerly a "one dimension" one in the

days when naval actions were confined to fighting craft that remained on the surface of the water.

For the defense of advanced bases for the Fleet both the submarine and the aircraft have added weapons of great possibilities and have much increased the importance of the defensive and offensive problems connected with them in many ways. In addition to the mine and the gun we now have the torpedo fired from the submarine and the bomb dropped from the airplane as additional means of defense for advanced bases, and in addition the great assistance of these two types of fighting craft in problems of distant scouting from bases will be of immense value. The advantages which submarines and aircraft give to the defenders of distant temporary bases for the Fleet in overseas operations are offset to some extent by the fact that the enemy will also use these two types of fighting craft in operations against the attacking fleet and also against the temporary outlying bases.

Every added weapon of defense or offense and every new method of warfare only makes the problem a little more intricate and makes it all the more necessary that the force designated to carry out the establishment and defense of a naval advanced base should be thoroughly trained beforehand and indoctrinated in the theory and practice of the problems involved. The sailing of the Fleet to participate in a war overseas is the first phase of a major war and the situation demands the utmost speed attainable; all commentators agree that when the plans state that the Fleet "will be ready to sail in D plus X days" the unknown X should be reduced to the lowest number possible and this spells preparedness in all divisions of the Fleet and its supports, including the Advanced Base Force of Marines.

We must always give the enemy the credit of all the foresight, skill, energy, efficiency and courage that we claim for ourselves, and, as a factor of safety, just a little bit more; and this being accepted in our first estimate of the situation, it is reasonable to assume that his cruisers, submarines and aircraft will be ready to make a raid upon our selected advanced base site very soon after its location is indicated by the direction of the Fleet's initial movements and its probable intentions may have been deduced. This means speed in the movement to the selected site for the base and speed in the landing of the men and equipment and the establishment of the various defenses, and this in turn means that the equipment must all be selected, determined, and assembled before D-day, and that the personnel for the purpose must be trained in advance of that initial thrust.

If, when the trial comes, our expeditionary forces have met the problem with accuracy and speed and done its work well, due to efficient peace-time training before the war, the enemy attack upon the base will be repulsed and the fuel, provisions, ammunition and other supplies, with the auxiliary ships and supply ships that make up the Train will receive the protection intended and saved for the future use of the Fleet, in order that the Fleet may be maintained at a distance from its home bases for further attack upon the enemy Fleet. If, on the other hand, the preparation of the Advanced Base personnel and equipment has been neglected and is not ready to meet the emergency, the enemy raiders may find it an easy task to gain the upper hand and capture or scatter the auxiliaries and supply ships and thus cripple the operations of the fighting fleet before it has had full opportunity to accomplish its mission of searching out and defeating the enemy main fleet.

If the descent of an enemy raiding force of cruisers and a landing force accompanied by aircraft succeeds in capturing our advanced base, the battle Fleet, returning to its base for temporary refit and refuelling after a drawn battle or partial victory preparatory to further offensive action, would find its supplies gone or destroyed, and the whole campaign might be lost in spite of the most skilful handling of the fighting Fleet and the most gallant conduct of its personnel.

On the other hand if the advanced base defenses, material and personnel, have accomplished their purpose and withstood the raiding attacks of the enemy, the fighting Fleet will have the full use of the supplies and stores within easy distance of the theatre of operations and can rely upon the advanced base as a temporary refuge for such refuelling and refitting as may be required before again joining issue with the enemy Fleet.

The scene of action at sea is subject to sudden changes due to the movements of the enemy Fleet and an advanced base in excellent location to support its Fleet in one fighting theatre may thus be left far in the rear due to an enemy retreat or change of plan. *For this reason the whole advanced base theory is founded upon mobility as compared with the immobile theory of permanently fortified and defended shore bases* which can not be moved to meet the requirements of a fleet which must shift its scene of action to follow an elusive enemy.

In fact the advanced base force is an element of the Fleet and must be so designed to accompany the Fleet to the vicinity of the first selected theatre of operations and there go into place rapidly, but never permanently, always ready to pick up its elements rapidly and embark and move on to another scene of action, entirely dependent upon the movements of the battle fleet, final victory for this Fleet being the basic and only consideration.

In this phase of the war, the strictly naval phase, the mission of the Fleet is to capture or destroy the enemy main fleet, and in a war of major effort with an overseas foe it is only after the naval phase of the campaign has ended in victory for the Fleet that the sea is clear enough of enemy forces to allow the transportation of large Army forces across it for the next great phase of the war, the landing of the Army and prosecution of major military operation on land against the land forces of the enemy.

Again for example, let us suppose that some foreign power with an ever increasing population, but hemmed in on all sides by other densely populated countries so as to preclude the possibility of spreading out its over population at home, should turn with longing eyes toward the broad domain of our sister republics in South America with thinly scattered populations and attempt on one pretext or another to establish colonies there. It is possible that a foothold might be obtained following such action before we could prevent it short of recourse to actual war, and as a result the principles of the Monroe Doctrine might be invoked and the invading power compelled to evacuate the invaded country by force of arms.

As the United States has no permanent naval bases south of Guantanamo and the Canal Zone such a

contingency would force us to select an advanced base at a convenient distance from the scene of action; and this would require the services of an advanced base force with its complete equipment and armament ready to accompany the Fleet and occupy and defend the selected location as the Admiral of the Fleet might determine. Here as in other wars the exact location of the advanced base or bases would depend largely upon the decisions of the enemy, since, as he would be the agressive party to the quarrel, he would naturally choose the point of the principal attack and our base would perforce have to be within striking distance of such selected point.

In this case the base would probably be established in some port or harbor of the friendly country to which our aid would be extended to free it from the aggressions of the invaders, but the questions having to do with its military defense would be the same as in other cases overseas since the invading power would undoubtedly at once attempt to prevent the establishment of the base or attack it after such establishment.

In the first stages such a war would be largely a naval affair and again the first phase of the conflict would consist of the attempt of our naval forces to gain command of the sea by capturing or destroying the enemy fleet. If successful in this first phase we might force the withdrawal of the enemy from the invaded country without further operations other than the aid given us by the land forces of the invaded country, but if such a course should not end in speedy victory for our arms, the way would then be open for us to transport a large land force to the scene of action and engage in the second phase, consisting as usual in land operations by a large army.

Under the above mentioned conditions the establishment of the advanced base for the Fleet would have to be accomplished with great decision and speed and in the face of enemy opposition since it would be a prerequisite to the naval campaign of the first phase of the war. Here again the task imposed presupposes that the advanced base force would be thoroughly organized and trained and equipped to carry out its mission.

As fleets grow in size, power, speed and radius of action due to increased fuel supply carried, and communication between widely separated points on the earth's surface becomes easier and more rapid, the distances which fleets may have to steam in order to seek out the enemy fleet and engage it become greater and the size of the Train which must accompany them becomes larger. It would be imposing an unnecessary burden upon the fighting fleet to require it to detach some of its principal units to protect such a Train out on the high seas during the preparatory search problems and the actual engagement of the fleets and such a course would at the same time lessen the fighting power of the battle fleet.

The battle fleet will account for the enemy main fleet once the issue can be joined, but the enemy may and probably will have fast cruisers, destroyers, aircraft, and submarines which could be alloted the task of attacking such an exposed Train, and by such action might deprive the battle fleet of its vital supplies. The answer to the problem has been determined by experience and study and is the establishment of temporary bases for the fleet located conveniently near the theatre of fleet operations, and once such a base has been selected it must be adequately defended if it is to serve its purpose. The question then is, how can such defense best be secured. It is an easy matter with unlimited time and money and labor in time of peace to provide strong defenses for any port or harbor, but the place selected for an advanced base for the fleet during an active naval campaign at a distance from the home bases must be seized and put in a state admitting of its adequate defense in a matter of a few days, and this must be done with the personnel and material which can be carried along with the fleet.

In wars of the past it has frequently happened that admirals have found it necessary to detach elements of the fighting fleet to guard the ships of the train or merchant ships or transports under the escort of the fleet while the main fleet engaged in battle with the enemy fleet, and such a course has been offered as a ready solution of the present problem. Against this it can be stated that this is not the purpose of the battle fleet and its supporting elements—the mission of the fighting fleet is to engage the enemy fleet and capture or destroy it as expeditiously as possible; and this can best be done by striking with the heaviest possible force and avoiding diversions which would lessen such striking power.

From a study of the naval campaigns of the past and the probable requirements of such campaigns on the future, it appears that the *well-balanced fleet* towards which we are constantly striving should contain as one of its major elements a thoroughly equipped and trained advanced base force, ready to accompany the fleet to any theatre of action overseas, and there seize a selected port or harbor as an advanced base for the operations of the fleet, speedily put such base in a state of adequate defense against enemy raids, and hold it at all hazards for the service of the Fleet. Such a base having been once determined upon and occupied, its defense must proceed with energy, certainty and speed compared to which the deliberate fortification of a harbor in peace times is a simple matter.

Mines must be laid in the sea approaches and across harbor entrances and channels, gun positions must be prepared and masked against enemy air observation as well as observation from surface craft to seaward, searchlight stations must be provided, ample radio facilities established, facilities for aircraft of both sea and land types arranged, obstructions laid to make enemy landings and advances upon the defenses difficult, complete inter-force communication systems completed and combined with adequate facilities for communication with the fleet and its elements on the sea, beneath the sea and above the sea, and finally the force must be thoroughly instructed in manning and supporting the prepared defenses to meet enemy attack by bombardment from the air or from seaward or assault by a landing force supported by ships and aircraft.

In the early studies of the subject it was soon determined that no one in the naval service was prepared to undertake the work with fair prospects of success, and that it was out of the question to consider depleting the crews of the fighting ships to secure the desired force. It was realized, however, that in the Marine Corps the Navy possessed the nucleus of a force well adapted by former experience and tradition to undertake the task, and as a result we conducted various exercises and experiments de-

signed to fit the officers and men of the Corps for this duty.

In 1901 guns were taken from battleships and cruisers and mounted on shore for temporary defenses; in the winter of 1902-3 a regiment of marines accompanied the Atlantic Fleet to Caribbean waters and engaged in training exercises at Culebra including landing and mounting of guns of various calibers, construction of earthworks and communication systems, and mine laying, all with a view to the rapid defense of a temporary naval base; and in 1903-4 and again in 1908 elements of the Marine Brigade stationed in the Philippines engaged in work of the same nature. A school for study and investigation of the details of advanced base work was established at New London, Conn., in 1910 which accomplished something in the line of indoctrination in this field, and later it was moved to the Marine Barracks at League Island where quarters and facilities were made available for a larger force.

In 1912 the Navy Department definitely assigned the work as a function of the Marine Corps and certain guns, mines and other equipment were set aside for the purpose, and plans were made for a definite system of annual training expeditions for this special duty. The requirements for battalions, regiments and brigades of marines on peace time expeditionary duty for the protection of American interests in other countries and the safeguarding of American lives and property naturally interfered to a great extent with any systematic training in this advanced base work as there were never sufficient marines to perform both of these duties at the same time, and the World War with its all engrossing demands for land forces on the West Front took the greatly enlarged Marine Corps into the A. E. F. to win undying fame and experience and tradition which will be of service whereever Marines may serve in the future on land or sea.

The occupations of Haiti, Santo Domingo, and Nicaragua by Marine Brigades has afforded training for the participants which is of great value to them in preparation for advanced base work, for it teaches self reliance, courage, devotion to duty, and engenders esprit and elan as no amount of peace time training could do. The defense of a naval advanced base in war will require a wide range of military activity not the least of which will be the employment of infantry units and aircraft units and complete cooperation between these two branches in communications and in action, and in this the "bush warfare" in the small countries to the south of us has given an experience which could be gained in no other way than in such actual active service in the field. Likewise the frequent transportation of elements of these Marine Brigades in the vessels of the Navy in every class from battleships to destroyers has been of great value in accustoming these Marines to life aboard ship and to embarking and disembarking therefrom.

Having taken a glance at the development of the subject from the days of sailing ships to the present day of fast steamers, motor propelled vessels and aircraft, and rehearsed some of the reasons which exist for the necessity of a specially trained body of officers and men of the naval service for this important task of the naval advanced base, it now appears appropriate to make a hasty estimate of the situation to determine the force required, the equipment necessary and the means that should be provided to transport such personnel and material.

In broad terms and with no attempt to follow any mandatory form of presentation, these considerations are as follows:

1. When the battle fleet puts to sea as early as possible after a declaration of war has made such action advisable with the task of searching out the enemy fleet and engaging it in battle, all of the attendant elements that may be required to support it should accompany it in order that they may be at hand when and where required in the campaign. These elements include the Train with its fuel ships, supply ships, ammunition ships, mine layers, mine sweepers, and repair ships; the submarine force with its attendant mother and repair ships; the destroyer squadrons with their base ships; and the aircraft attached with their carriers and tenders.

2. When the battle fleet, accompanied by this great Train, approaches the vicinity of the enemy fleet in the zone of active operations predetermined by the position selected by the enemy fleet, all of the ships not assigned a place in the fighting lines must be detached and left at some convenient location where they will not hamper the evolutions of the fighting ships during the progress of the battle, but still near enough to the scene of the conflict to be available for the use of the fighting ships after the end of the engagement.

3. In order that the greatest possible strength may be present to meet the enemy, none of the fighting ships which will add strength to the fighting line should be detached to act as a convoy force for the Train.

4. To leave the vessels of the Train without some form of defense would be to leave them at the mercy of the swift cruisers of the enemy who may be expected to foresee such an opportunity and take advantage thereof.

5. To meet these requirements the ships of the Train should be left at some port or harbor conveniently located as to the scene of the general engagement and should be protected there by temporary defenses against the raiding forces of the enemy.

6. The enemy, with an eye to the importance of keeping his own fleet at the maximum efficiency, could not afford to detach any of the battleships of his fighting line to engage in raids upon the improvised base, but he could and probably would send a force of swift cruisers and aircraft on such a mission.

Hence the solution of the problem of the proper defense of the necessary fleet train of supply ships and auxiliaries appears to be to take with the main fleet in its expedition overseas guns, mines, aircraft and other equipment, especially suitable to the purpose of the rapid defense of advanced bases at such ports as may be selected, with the force of men requisite to put these defenses in place in the shortest possible time and to properly man and fight them.

Consideration of the size of the force for any definite task must always depend upon the forces available and upon the means of getting such force to the scene of active operations in time to meet the situation. In strictly land movements the movement of the force to the scene of operations may be accomplished in many ways, by marching, by rail and river and lake steamers, or in recent times by large fleets of motor trucks; but in operations overseas the trans-

portation of the force for the defense of advanced bases for the Fleet must be by ship, either they must be carried in the regular fighting ships of the Fleet or in transports of one type or another. An objection to carrying the personnel and material of the advanced base defense force in the battleships and cruisers of the fighting fleet is that such action would hamper the movements of the Fleet in its efforts to join with the enemy fleet; freedom of movement is a paramount consideration for the fighting fleet, and where possible everything should be subordinated to it. Hence the alternative plan of carrying the advanced base force and its equipment in transports should be adopted, which brings us to a consideration of such ships.

Advanced Base Transports

Having determined that our problem calls for a plan to carry the advanced base forces and equipment with the Fleet in its initial movement overseas in a war involving the necessity of fleet actions beyond the support of the permanent home bases of the Fleet, a study of the requirements for such transportation of this force appears to be in order. As in all questions involving the use of transports there are two solutions, first, to employ as transports in war time the merchant ships, both freight and passenger vessels, that are normally employed in commerce in peace times; or, second, to build specially designed vessels for this purpose as a part of the established naval force. The first method is advocated by the friends of a great merchant fleet sufficient to meet the requirements of peace time commerce as well as to furnish such transportation of men and material as may be required by the Government (Navy and Army) in war time.

While it may be admitted that the average passenger vessel may be readily fitted for service as a troop transport in war where such troop transportation consists in a purely passenger movement directly from one port to another over a definite route, as was the case with the movement of the tropps of the A. E. F. across the Atlantic during the World War, when we come to consider a troop movement overseas which requires the transports to accompany the fighting fleet on a voyage of unknown duration with the port of debarkation as yet undetermined and largely dependent upon the developments of a great naval campaign, the problem is vastly different. In the latter case, which will normally occur in the employment of an advanced base force with the active fleet, the transports must have certain characteristics not at all common to the passenger or freight vessels of the merchant fleet, which brings us to a careful consideration of these characteristics.

Consideration of the varied requirements leads to the conclusion that the transports best suited for use by an advanced base force accompanying the Fleet should be especially designed and built to meet such requirements. In the first place, these transports will be needed at once upon or before the outbreak of war and there will be no time available for assembling and refitting merchant ships for the purpose, and again the average passenger vessel of commerce is not suited to such use without radical changes in design and fittings.

While a budget system of government expenditures dictates a careful consideration of the needs which are paramount, we are not primarily concerned with these financial aspects of the subject, but rather is it our province to state what the military requirements dictate and what characteristics would lead to the adoption of the best ships for the purpose.

For many years the trend in all merchant ships, both freight and passenger, has been toward an increase in tonnage and speed, and the rule applies with special force to the transports under consideration. Greater tonnage gives proportionately greater efficiency, a ship of 25,000 tons requires no more protection than one of half that size; within reasonable limits the larger ship requires a less proportion of her tonnage for motive power weights and hence the larger ship will be the faster one; these transports should be large enough to carry the standard unit of the force, which is the regiment; the transport must be able to carry on board landing boats of suitable design to quickly disembark and land its personnel on a hostile shore where the use of piers, wharves and harbor facilities is out of the question and this can only be accomplished with a large transport; for tactical reasons it is better to have a transport squadron of as few ships as practicable to be taken in convoy by the fighting ships which the transports must accompany; and sea worthiness usually increases with the size of the ship.

If we decide that each transport should be large enough to carry one regiment and a considerable portion of its equipment with due regard to the fact that once embarked the exigencies of the campaign may require a considerable period of life aboard the ship, and that it should also be able to hoist aboard, transport overseas and hoist out the specially designed landing boats, and at full load displacement maintain a sea speed that would enable it to accompany the Fleet under all sea conditions, the suggested characteristics would be approximately as follows:

Tonnage—About 20,000 tons displacement, loaded.

Speed—Twenty knots sustained sea speed, with a reserve of 2 or 3 knots.

Propulsion—Turbo-electric power, twin screws, in accordance with modern developments in naval and merchant ships.

Fuel—Oil.

Steaming radius—Equal to that of the largest cruisers and auxiliaries of the navy.

Battery—Guns of the type assigned to light cruisers with especial attention to anti-aircraft defense, and the covering of landing forces disembarking from the transports.

Quarters—Living accommodations for the regular naval officers of the ship's crew, and sufficient passenger accommodation for the officers of the regiment the ship is designed to carry. Complete living accommodations for the regular naval crew required and specially designed accommodations for the enlisted force of the regiment; with adequate messing, cooking, distilling, toilet and bathing facilities for continued maintenance aboard of the crew and regiment being transported.

Cargo capacity—As large as practicable in order that as much as possible of the equipment of the regiment may be carried on the same ship as the personnel thus assuring that the equipment will be available for landing with the men. The hatches should be arranged with a view to rapid handling of the equipment carried with sufficient derricks and booms to work all hatches at the same time, as speed in handling

the equipment is an important feature in the debarkation of the advanced base force.

Boats—The question of boats and landing facilities for advanced base transport ships is of utmost importance and studies and experiments indicate that the regular navy ships' boats are not entirely suited to the work in view and that additional boats of special types are required to handle the landing of the personnel and material of the advanced base forces or of other overseas expeditions which may be forced to land under fire on an enemy beach in the operations contemplated. Various types of "beetle-boats" and self-propelled landing scows have been planned and built and also used during the World War in landings under fire from shore forces. A discussion of these types is too long for this paper, but it may be noted that such boats should be of a size and weight such that they may be hoisted aboard the transports without outside help of cargo handling facilities and also hoisted out again under reasonable weather conditions. They should also be self-propelling and be provided with protection against enemy small arm and shrapnel fire from land batteries.

Hospital Facilities—Sufficient for the regular crew and the regiment being transported, having due regard to the fact that the ship may have to keep the sea for a considerable period without opportunity to transfer sick to the hospital ships in smooth water.

The above is only a general outline as to the desirable characteristics for the transports desirable for the work under discussion, but it will be readily seen that the usual large passenger ship is not entirely suited to the work without very considerable alterations which would take so much time as to greatly delay the initial sailing of the Fleet upon the outbreak of a war.

Our entry into the World War found the Navy with but one transport which had been especially designed and built for naval service under the requirements considered previous to that time. This was Transport No. 1, since known as the *U.S.S. Henderson*, so named in honor of Brevet Brigadier General Archibald, U. S. M. C., who was Commandant of the Marine Corps during the period from 1820 to 1859, which first saw service transporting a regiment of Marines to France to join the A. E. F. and has since carried Marines to Cuba, Haiti, Santo Domingo, Panama, Nicaragua, Hawaii, China, the Philippines and Guam, and is still the best fitted and found transport under the flag, though now antiquated as to size and speed and armament. The *Henderson* was the first transport designed to carry Marines on advanced base missions and as such deserves honorable mention here. Transport No. 2 was authorized for the Navy in 1916 but no funds were ever provided for her construction and after the World War several of the Shipping Board ships were turned over to the Navy for transport use, one of which, the *U.S.S. Chaumont*, 13,000 tons displacement, is still in service as a naval transport. Both the *Henderson* and the *Chaumont* are too slow for the modern requirements of advanced base transports and both are too small to meet modern requirements.

Auxiliary Ships

In addition to the Marine regiments of artillery and infantry and the staff and auxiliary troop units that will make up the Advanced Base Force to serve with the Fleet in future wars involving overseas operations, the assistance of certain types of naval craft in the service and defense of such advanced bases will be of great value. The small mine layers will be useful to lay mine fields covering certain areas of approach to the defenses and channels that should be thus denied to the enemy; the smaller submarines operating from the advanced bases will be of value both in obtaining information of the enemy approach and in attacking enemy cruisers that approach the bases or in attacking enemy transports that may attempt to disembark landing forces near the bases for land operations against them; and squadrons of naval seaplanes and aircraft with their tenders in support will prove of immense assistance to the defenders of the bases in warding off enemy attack and the service of security and information.

In addition to such naval vessels and aircraft as may be assigned to assist in the defense of the advanced base, ships of the Train using the base as a rendezvous or refuge while the Fleet is operating on the high seas can furnish additional help in the preparation of the defenses of the base and also in their actual defense in case of attack during their presence at the base. The anti-aircraft batteries of auxiliaries at the base would in this manner prove of great assistance in case of an enemy air attack.

In the early stages of preparing the defenses of the advanced base the skilled artisans of the crews of ships temporarily at the base would be of assistance in establishing lines of communication, building magazines, establishing search lights ashore to cover mine fields or open sea approaches, and in fact in any of the various branches of the work. It must always be remembered, however, that this assistance is only casual and not to be counted upon in laying plans and in training and outfitting the forces who are to be directly charged with the work of establishing, manning and defending the advanced bases for the Fleet. The force destined for this task must be complete in itself and thoroughly trained to meet all probable exigencies if it is to meet the terms of its assigned mission.

When the main force of fighting ships is present at the base the main defense of the position will devolve upon the battleships, cruisers, destroyers and fleet aircraft squadrons, but such defense can never be depended upon and would be an unusual condition. However, it will not be an unusual condition for one or more of the heavy fighting ships or even a greater number of destroyers, submarines or other smaller craft to be present at the base refueling, refitting, taking on supplies or effecting such necessary repairs as may be possible at the base, possibly alongside of repair ships. In such case the batteries of these ships would be of assistance to the defenses of the base in case of an enemy raid by surface craft, aircraft, or landing force.

The Advanced Base Force

In the last analysis the organization and training of any military or naval force should depend upon the nature of the mission assigned to it in war. The trite saying oft repeated through the ages, "in time of peace prepare for war," is just as true today as at the time it was first voiced and we would be derelict in our trust if we should not do all that is possible to insure that this preparation is as complete and efficient as careful forethought and adequate training can make it.

As in any other military situation the strength of

an advanced base force will depend upon several considerations; the forces available for the purpose, the means of transporting such force; the probable strength of the enemy force that may be brought to oppose it; and the strength that will give best promise of success and at the same time be sufficiently flexible as to movement as to enable it to move with the fighting fleet, be landed and established on a foreign shore with the greatest despatch, and be picked up and moved to another site as the developments of the naval campaign may dictate.

Whatever the size of the force desired for any particular campaign may prove to be when the need comes, the size of the force which can be assigned to systematic training for the purpose in ordinary times of peace when no war is in view in the immediate future will naturally depend upon the number of Marines in the actual strength of the Corps at the time, the other duties that may be assigned to the Marine Corps, and the funds allotted for the purpose.

Experience of the past and consideration of the probable needs of the future has demonstrated that the organization of a competent advanced base force must embrace infantry, artillery, air force, communications troops, engineers, and the proper proportion of supply troops, all to be furnished by the Marine Corps, together with the requisite auxiliaries to be furnished by the Navy as already noted.

The infantry should be highly trained in all of the regular duties of this branch and in addition should have special training in landing from ships on a hostile shore without the aid of the wharves and port facilities which are found available in the usual troop movement overseas of a large force of Army troops, such as occurred in the World War. The infantry should also have special training in supporting the artillery of the advanced base defenses against the landing attacks of the enemy. This role of infantry troops reverses the usual procedure in land warfare where the artillery is looked upon as the support for the infantry in action.

The artillery should embrace light batteries with a high degree of mobility secured by motor traction and *also heavier guns* which *must also be of the mobile type*, the modern development of aircraft having made fixed battery defenses for the advanced base obsolete, with anti-aircraft guns to meet attacks from the air.

The communication troops must be trained in the erection of all types of radio stations for communication between the base and the main fleet and also between the different units of the advanced base defenses; the laying of a telephone communication net connecting all of the elements of the defenses, and the establishment of a visual communication to supplement the other systems. Attacks of the enemy may put one or more of these communication systems out at a critical moment and the provision of every means of communication possible is a precautionary measure which may mean the difference between success and failure.

The engineer troops should be trained in the laying out and erection of suitable earthworks and trenches for protection against landing attacks; in making underground magazines where the reserve ammunition will be secure from attacks by bombardment from ships to seaward or from attacking aircraft; and in the laying of the various classes of obstructions to impede the enemy advance under water at promising landing places, along the beaches to hold up an attacking force after it has left its boats and reached the open beach for an advance to a land attack, and in the line of probable enemy advance from the beach to the areas where they would meet our defense forces for a final test of strength. The engineers and also the artillery units should be previously instructed and trained in the erection of lateral and overhead camouflage to hide battery and defense sites from view from ships off shore and also from enemy aircraft.

The air force of the advanced base defenses should be trained to act as an observation force to seaward as far as practicable to spot the advance of enemy ships and should also be ready for bombing operations against enemy ships, especially against enemy transports putting troops into small boats for a landing attack. Just at the time of such disembarkation of troops off shore the enemy transports will be particularly vulnerable to such air attacks since their speed must be reduced very much to make the disembarkation of troops possible.

The liaison between the various elements of the shore force of an advanced base and the elements of the floating forces assigned as auxiliary to it must be complete and efficient, for example between the shore force and the naval aircraft operating off the base, and between the shore force and the submarines assigned to scouting duty at a considerable distance from the base in the line of advance which enemy ships would probably follow in coming to the attack of the base from seaward.

As has been noted the customary training received by the infantry units tends to fit them for their duties in this special work but these units should also be especially trained for the special duties required of them at an advanced base, and the same comment is pertinent for the artillery units of the force and for the special troops included. This additional training can best be secured in peace time by combined maneuvers with the Fleet under circumstances simulating actual war conditions, giving all an opportunity to land at suitable selected sites under such conditions as to develop the technique of landings without the aid of port facilities such as wharves, piers, cranes, derricks and shore rail facilities from the wharves to the inland points to be occupied as part of the defense scheme.

Actual experience is required in the handling of the equipment, including heavy guns and tractors and other heavy weights, from ship to shore and vice versa, for in no other way can the officers and men of the force gain the experience which will accustom them to the work, familiarize them with the material which they must use in war at short notice, and thus enable them to a realization of their abilities and limitations.

Advanced Base Sites

In order to plan intelligently for the occupation of any port or harbor as a naval advanced base in war, complete knowledge of the hydrographic and topographic features is a prerequisite, hence an important part of the preparatory work consists in the acquisition of such information and its study with a view to a determination of a reasonable plan to suit each case. Consideration of a large number of ports, harbors, bays and protected bodies of water that might serve for the purposes under discussion leads to the

conclusion that they are readily divisible into several classes dependent upon shape, size, contour and surrounding country. Thus we have as primary divisions, island sites and coastwise sites; the island sites being usually ocean islands having protected anchorages with certain land features rendering them defensible by the means which would be at the disposal of a well found advanced base force, and the coastwise sites being usually bays, harbors or semi-enclosed bodies of water on the coast which are not already provided with permanent or other fortifications.

Many of the possible island sites appear to be well adapted to the purpose and they have the advantage that being separated by water from the mainland they would not be open to siege, attack or investment by land forces, but the enemy would have to embark his attacking force and make a landing on the island in the face of the activities of the defenders before he could subdue them. On the other hand the island sites are frequently so small that they could be practically surrounded by the ships of the enemy and subjected to constant wearing down bombardments and air bombing attacks. Thus a small island which would conveniently fit the comparatively small force at the disposal of a fleet in the form of an advanced base force might readily be so small as to present a constant target to the attacks of the enemy raiders, while a larger site would scatter the efforts of the attackers over more territory and thus make the defense easier.

Coastwise sites for advanced bases present the objection that they may be invested from the land side by the enemy land forces and may hence require repeated additions to the defending force to meet the growing opposition of the enemy. As the phase of the war in which the naval advanced base would prove of most value to a fleet delivering a general attack overseas is the first or strictly naval phase of the contest, it would perforce have to be conducted by the naval forces contained in the grand fleet as no considerable army forces could be hazarded on the open sea until the Navy had gained command of the sea.

In the end the determination of the site must depend upon the exigencies of the naval campaign, the availability of suitable locations within the sea area occupied by the operations of the Fleet, and the size and equipment of the force available with the Fleet for the defense of the base. It is easy to see that the site selected must, to a great extent, fit the defense force available since the operations of the Fleet could not be held up awaiting a re-enforcement of the advanced base force by additions from far away home bases; yet the determination may have to be made from a consideration of the sites actually available, and the best adaptation of the forces to the site available will be the final test of the military skill of the commander of the force, as upon such action will depend the success or failure of the venture.

Once the Fleet has departed on its initial venture overseas to search out and destroy the effectiveness of the enemy fleet it is reasonable to presume that the home bases nearest to the scene of action will be filled up with replacements of personnel and material for the Fleet and all of its elements, including the advance base force, for every operating military or naval force must have frequent replacements to keep it up to initial strength and add to that strength as the campaign progresses. This will enable an advanced base, seized at a favorable site and to be occupied for a considerable period, to be gradually strengthened as the campaign progresses. Eventually its force may be divided to provide for its protracted defense and also to provide for the defense of additional advanced bases for the Fleet or some of its important elements as they may become necessary to the Admiral's general strategic plan.

An important part of the preparatory work should consist in the study of all available information concerning many available sites for advanced bases on the plainly indicated routes of overseas advances by the Fleet, and the construction of plans for the defense of such locations with the men and material that could reasonably be assumed available for the purpose. Such a study taken in connection with actual inspection and reconnaissance of locations at hand which may have similar characteristics will serve to show what type of defenses should be provided and what force would be advisable to man such defenses. Consideration in this way of a considerable number of different classes of ports, harbors, bays and waterways that might serve the purpose as advanced bases will give a wide knowledge at first hand of the nature of the various sites and form a basis for the determination of a policy embracing the equipment, armament and personnel advisable to assign to this element of the Fleet.

The improvements in surveying and charting the coastlines and hydrographic features near them and in mapping the surrounding topographic features of the adjacent land have made it practicable to study these features with much more ease than was formerly the case, and in this as in other ways the world is growing relatively smaller as international acquaintance and means of communication are improved.

Advanced Base Equipment

The question as to what equipment in armament and otherwise shall be provided for the expeditionary force of Marines that is destined to accompany the Fleet and look after its temporary bases in an overseas campaign is an important one. On the one hand it is important that nothing which will add to the probability of success in the undertaking should be omitted, and on the other hand the equipment must not be so enormous as to hamper the mobility of the force and slow down the time that it will take to disembark, land, and establish the base.

Many of us remember the days long ago when the Marine was "the finest light infantryman in the world" and when he could "land on a bald man's head and paddle his own canoe" with his rifle, some extra cartridges and a few push carts. But this day has gone by; the present trend is to more and more complicated weapons and more paraphernalia, requiring more skill in their handling and more training in their use and more space for their transportation by ship and boat.

In general the armament must consist of artillery which can be handled by ships' cranes and booms in and out of the ship and which can be transported between ship and shore by boats which can be carried on the ship and handled in and out by its own cargo tackle. These guns must also be mobile and provided with motor transportation means. There must be a sufficient number of anti-aircraft guns to meet enemy

air observation or attacking squadrons and which may also be used to oppose landing forces.

The great steps taken in recent times in air defensive and offensive point to an immense use of this new arm in coming wars, and its adaptability to the peculiar needs of the defense of the temporary bases for overseas operations of the Fleet will lead to a very large proportion of this arm in the defense force of such a base.

The equipment to provide for ammunition storage and the storage and preservation of supplies and rations is a matter for determination beforehand, and is of enough importance to require careful thought. Provision for hospital service ashore is also necessary since it can not be expected that hospital ships of the Fleet will remain always at the base. Provision of motor transport ashore is of great importance as a high state of mobility of the elements of the defense force is most desirable and can be secured by such motor transport for artillery and infantry and it can also be used except during actual engagements for the necessary transport of all classes of stores and of personnel from point to point in the defensive zone of the base, and this will relieve the personnel of much manual labor, leaving them free for important drills and constructive work in the defenses.

Boats for water transportation between the different sites of the defensive works and between the shore and ships that may be at the base are requisites of the equipment and should be provided in the original outfit of the force, as ships' boats can not be always depended upon for this purpose.

Special means of handling stores and equipment in landing operations and also in reembarkation of the force should be provided where possible, as in most cases local means, such as wharves and harbor works, will not be found available. The use of pontoon bridge material for crossings of streams or arms of the harbors and even for connecting the transports with the shore for rapid handling of equipment in disembarking and reembarking may save much time and labor. Such use was first made of pontoon bridge equipment at Culebra during the Fleet maneuvers of 1924 and is shown in the accompanying illustration in course of construction. This type of bridge can be set up in a few hours where the ship can be securely moored to prevent yawing which would break the bridge and where the water is comparatively smooth all of the time. It will permit of the passage of motor trucks, guns, tractors, or even light whippet tanks. The pontoon bridge material is easily handled and can be quickly stored on the decks of transports, supply ships or freighters. Sections of the pontoon bridge also make excellent landing stages for small craft in the absence of permanent boat landings and they are put in place with much more ease and rapidity than is the case with other types of boat landings and have the additional advantage that they are quite mobile and may be quickly moved to new locations.

Preliminary Education and Training

Preliminary education to fit the officers of the Marine Corps to undertake the direction of the work herein outlined is of utmost importance in order that the Corps may intelligently perform the training required for the work and later perform the actual tasks imposed by this important mission with the Fleet in war.

The preliminary training for the duties required of the advanced base force should be carried on continuously at the permanent bases of the Marine Expeditionary Forces on the East and West coasts in addition to all of the other required training for the varied duties of the Corps. Of course, much of the regular training in the duties of the various arms will prove of great value to the personnel which must ultimately form the nucleus of the advanced base force to accompany the Fleet overseas in the first phase of a war of maximum effort overseas, but special training to utilize this regular training in the general scheme for the highest duty the Marines can perform with the Navy should not be omitted.

To this end participation of well organized and trained advanced base forces in the overseas maneuvers of the Fleet should be had whenever possible, as it will give officers and men a foretaste of actual conditions which they will be required to meet in war and will acquaint them with the various phases of the work in all of its many details.

To perform all of the many duties and tasks which will be met in the seizure and defense of temporary advanced bases for the Fleet during war requires the Marine of today to be far more than a good land soldier; to do this duty well he must be a "soldier and sailor too;" in addition to being a good infantryman, a good artilleryman, a good military engineer, or a good signalman, he must know considerable of the life of the sailor, what the sailor can do and how he may be expected to do it. This he can learn by actual experience with the Navy and in no other way, and herein lies the greatest value of service at sea in cruising ships of the Navy for the modern Marine.

The highest mission for the Marine today is the establishment and defense of the bases overseas which the Fleet must have to carry out its primary mission of gaining command of the sea, and while we are training for the minor tasks that we must meet in peace and war, we should keep our eyes and minds upon this major task and plan so that we may meet it with credit in the future as the Marines of the past have ever met the tasks assigned them.

The Navy-Marine Corps Problem

(Continued from page 18)

COULD be accomplished if they all used their heads and carried out their plan to the very last detail. At times the thing assumed a certain dramatic intensity. The more imaginative students talked in whispers and went about the map room wearing an authentic General Staff scowl. They became so thoroughly imbued with the spirit of the affair that the "war" was real. Their dinners tasted like canned Bill and beans, and they ducked every time a truck backfired.

The two weeks immediately preceding the Christmas holidays were set aside for the problem. No other work was attempted, and almost everyone put in several hours overtime. This unwonted enthusiasm had a two-fold cause: First, it was a real Marine Corps problem of the sort that any student might face at some time in the future; second, it presented a welcome relief from the rather shopworn campaigns of the notorious General A. Indeed he seemed a pallid fellow alongside General M, who had the brine of the sea in his whiskers and the lingo of the quarterdeck

on his tongue. General A, a poor, old stay-at-home who would get lost if he ever strayed beyond the Gettysburg area, stacked up very poorly when compared with General M, who planned battles beyond the dim horizon of the sea and who lived in a world of X-boats, palm trees, naval gun-fire and beach-heads. What a man!

If the problem fired the imagination of the more romantic among the students, it also gave all of them a broader view of their relation to the naval service. It aroused serious thought. It made them realize the technical quality of overseas operations, and brought them face to face with the fact that only officers who have had years of training, in and out of school, can ever hope to play a successful role in the seizure of an advance base. It brought home to them the disaster that will most surely follow any attempt of untrained officers to lead troops in such an engagement. It made them realize the tremendous strides that have been made since the World War. If they did not know it in the beginning, they knew long before the problem was solved that they were practicing a profession on a parity with that of the engineer.

The landing itself involved many engineering problems in connection with getting ashore heavy guns, tanks and other unwieldy material. Work on the signal communications annex showed that we must devise in advance accurate and portable signal equipment of special types not now available. The approach to the shore in small boats brought up the question of types and designs. In this connection it was found desirable to submit two separate boat plans, one based on the assumption that special boats designed for the purpose could be obtained and the other based on the actual situation at the present time. The latter assumption brought to light the difficulties that would face the commander of any Marine force ordered out on a landing expedition. A survey was made of all small boats available on one coast of the United States. Every boat the Navy could spare was listed. The resources of the Coast Guard and merchant service were also noted. The consideration of specially designed types called the attention of the students to three experimental boats. There are the A-boat, the B-boat and the artillery lighter. All are now at Quantico where the students can observe their operation and suggest such changes as may occur to them. A Marine Corps board is now considering various plans for special boats, and the officers dealing with this question must bring to bear upon it, not only ingenuity, but the highest degree of technical training. The boat schedules and formations developed during the progress of the problem will be a valuable contribution to Marine Corps technique. The writing of the shore party annex exposed a lack of general information on this subject which involves highly specialized activities.

The task of defending an advance base exhibited the necessity for extreme mobility by all units. In this phase of the problem every move of the artillery into position consumed a considerable amount of time between the actual landing of the guns and their emplacement. Under certain conditions of terrain this operation would be extremely difficult. If success is to be obtained our mobility must be preserved at all costs.

A detailed description of the problem would be a valuable contribution to the sum-total of professional knowledge, but it cannot be given here. Much of the information contained in the various plans are of a confidential nature and cannot be published. Within the limitations imposed by the regulations, the writer has attempted to give the readers of The Gazette an idea of the sort of work that is going forward at the Schools.

The problem will be used as a basis for further instruction. It will be the foundation upon which other problems will be built for solution during the year. These will involve train movements, embarkation movements and other highly technical phases of overseas expeditions. This year, for the first time, the Schools will undertake a map maneuver simulating a landing situation in which half of the students in the Field Officers' course will attack and the other half defend an advance base.

"Nor by Sword Alone"

(Continued from page 28)

Most friendly relations have been maintained with the French, Italian and Japanese troops of the Shanghai Defense Forces. The difference in language has been the only stumbling block to a better understanding and acquaintance. Calls have been exchanged between the ranking officers of these services, and honours rendered. In many instances, it has been the privilege of marine officers and their families to be entertained by the French, Italian, and Japanese diplomats, and their naval and military leaders.

Relations With Foreign Populace

Since the marines have been billeted in Shanghai, there has been no limit to the hospitality and friendliness of the foreign populace. The courtesies and privileges of the well appointed clubs have been placed at the disposal of the officers and their families, with guest privileges. The theaters, race-tracks, and athletic meets have tendered complimentary tickets to the command on numerous occasions. In return, the band of the 4th Marines has been placed at the disposal of the civic organizations, the clubs, schools, and athletic meets.

The officers and their families of the 4th Marines are guests at every social event of any importance in Shanghai. In return, no affair is given by the regiment that is not honored by the presence of the representative civilians, and the military and naval representatives of all services, on duty in Shanghai.

The Fourth Marines have enjoyed the friendship and esteem of the foreign populace of Shanghai, and of the officers and men of the British, Japanese, French and Italian Defense Forces, and the Shanghai Volunteer Corps.

"Peace hath its victories, no less than War," and the marines have indeed won the respect of those with whom they have been associated in the occupation of Shanghai.

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The Taking of Fort Riviere

(Continued from page 33)

were rushing through the high grass and brush; there was yelling and shouting by Marines and Cacos. Hand to hand fighting, even with rocks, was going on. It was Sergeant Grimm, I believe, who exchanged rock for rock with some unknown Caco; the two of them pitching big stones at each other over a wall gave a comical twist to the otherwise confused melee of bayonets and machetes. As our company arrived at the foot of the south wall, we saw marines on top and heard the cursing of the mixup inside, so most of us went around to the gap and entered just as the battle was over. The entire fracas took less than twenty minutes; not a marine was killed and only a few were bruised and scratched. Over thirty Cacos, including two or three of their "Gros Chefs," were killed. This battle of Ft. Riviere broke the backbone of the bandit activities in Northern Haiti.

Major Butler took a squad of our men that night, tramped down to the railroad, got a push car, and went into Cape Haitien for a dozen or more cases of dynamite. They pushed it back up the railroad, passed the Horseshoe Bend, loaded it onto burros, climbed the mountain and got it safely to the fort before daylight. Just before dawn three Haitien women carrying food, evidently the Caco Commissary Department, came shuffling up the trail to the gap. They had not heard that we had taken the fort the day before, and when they saw a marine sentry in the gap in the walls, they uttered one scream, dropped their rice and beans and fled. The dynamite was used to blow many gaps in the walls of Ft. Riviere. What was left of the old fort was abandoned and was never again used either by Caco or Marine.

A Plea for Revision of the Field Officers' Course

To the Editor:

For ten years the Field Officer's Course of the Marine Corps Schools has carried on. A feeling has gradually crystalized that this course does not fully satisfy the requirements of the officers of the Corps; that certain fundamental changes in policy and a revision of the course are essential before the best interests of the Marine Corps are served. This feeling has found public expression for the first time in an article by Lieutenant Commander H. S. Jeans, U. S. Navy, published in the November, 1930, number of the Marine Corps Gazette.

There are several points in Lieutenant Commander Jeans' frank and constructive criticism of the Field Officer's Course that I believe should be stressed: The system of examinations and marks is wrong. No marks should be required or given. Every facility should be offered the student to develop his ability to the end that his analysis of the various problems will be arrived at only after a careful estimate of the situation in which all factors entering into the problem will be weighed and the decisions made with the student employing all his knowledge, originality, and initiative. These decisions should not in any way be influenced by what the student has learned that the instructor requires in an approved solution. Only by changing the present system of awarding marks will this much to be desired emancipation of the student be secured.

The Field Officer's Course patterns itself closely to the corresponding courses of the Army Schools, which, admirable as they are for the purposes of the Army, have neither the flexibility nor the scope that a course of instruction for Marine officers should have, and which in fact contain material better eliminated and replaced by subjects of far more value in a course designed for the education of Marine officers. This probably smacks of rank heresy to those among us who bear the chop mark of the Army Service Schools. With all due respect to the affiliation of the Marine Corps and the United States Army in every war in which the United States has been engaged, it has been in the performance of a vast array of peace time duties and in the fighting of numerous minor wars, whose conduct is not touched on at Army Service Schools, that the Marine Corps has earned its well deserved reputation. In our one hundred and fifty-five years of history we have had one officer command a division in battle. We have had hundreds of officers command units in size from that of the brigade down to the detachment on the many expeditions that have made our history. It is in the training of officers for the peculiar problems which have developed in our small wars of the past and which will most assuredly confront us again in the future that the Field Officer's Course should specialize.

The Field Officer's Course should include a comprehensive course in reading supplemented by lectures presented by the staff, on historical subjects, in particular, a study of the overseas operations of our own and foreign expeditionary forces. It should also include a detailed and thorough study of the military, political, geographical, social, and financial history of the Central and South American Republics and those of the West Indies.

While we should develop our Field Officer's Course strictly on Marine Corps lines, molding our training and thought on the pattern of neither the Army nor Navy schools to the neglect of our own peculiar requirements of service, we must, nevertheless, always keep in the foreground one vital truth and formulate the policy of our schools and operate them in accordance with this truth which has been succinctly expressed by the present Major General Commandant in these words: "The need of a Marine Corps will cease to exist when the necessity of the Corps as a branch of the Naval Service ceases to exist."

JOHN A. GRAY,
Major, U. S. Marine Corps

Be sure to get the next issue of the Marine Corps Gazette which will be issued in May. It will contain the greatest array of articles it has ever been our privilege to print.

Salient Haitian Facts

(Continued from page 17)

in three places by an earthquake in 1842. Down its eastern flank is a well-marked brick conduit that for years was believed to be part of a subterranean passage running from the Citadel to Sans Souci. Examination of its interior has shown, however, that it was undoubtedly constructed to carry the sewage of the Citadel down the mountainside.

A great number of bronze guns, mounted on mahogany carriages, are still in place in the gun corridor that cover every approach. Many others, including mortars, are scattered throughout the four floors and the inner court of the Citadel. The largest are 56-pounds, of 6-inch caliber, and the majority of them bear an arsenal stamp of 1786. All are beautifully chased with royal coats of arms or regimental crests.

Some were pieces abandoned after the ill-starred British invasion that came to an end in 1798. Others were captured from the French or salvaged from the wrecks of British, French and Spanish men-o'-war. There are hundreds of solid and hollow round shot and in the magazines may be found flintlocks, some with the American eagle and thirteen stars, mute reminders of the Haitian expedition to Savannah; small "crows' feet," designed to be scattered on the trails to pierce the feet of horse and men should the Citadel be attacked; and caked black powder, clinging to the crumbling oaken staves of powder barrels, that still ignites. The water supply of the Citadel was assured by the troughlike construction on the roofs of the west gallery and of the northwest bastion. There were luxurious royal quarters, casernes designed to house a force of 10,000 men, a Place d'Armes for ceremonies and drills, stables, a moat and drawbridges, storerooms and dungeons. In the past many of the deep storerooms were believed to be dungeons but their exploration showed them to be entirely devoid of light or ventilation, and over many of them may still be found the pulleys necessary for lowering and raising the stores. Facing towards Cape Haitien, from which he could see the top sails of any invading fleet, Christophe had his Council Room. The ceiling is so vaulted as to give it the acoustic effects of a great sounding board. Here, in his chair of state, the judgments that he pronounced came to his victims with a thunderous effect that struck terror into their superstitious souls.

In the open inner court stands the remains of Christophe's tomb, a rudely built sarcophagus of brick which was recently restored. Years ago it was broken into and rifled and no trace of his body remains. Nearby is a smaller tomb, that of his favorite son, who was killed by lightning.

From the parapets of the Citadel may be had a remarkable view of the great plain of the North, the little bays in which Columbus' caravels dropped anchor, and a tremendous panorama of mountains, sea and valleys, with Monte Christi, forty-odd miles distant in Santo Domingo, clearly discernible on a clear day.

Christophe did not live to see the completion of his great work. Its construction had been possible only by the organization of his section of Haiti on a feudal plan. All of its riches and its peasants, regardless of age or sex, were ruthlessly drafted for its building. Boyer had succeeded to power in the South on the death of Petion in 1818. Christophe's blacks were deserting in increasing numbers to Boyer's more lenient rule, and the spirit of revolt was growing. Although he had been suddenly stricken with paralysis, he recovered sufficiently to see his troops, under Prince Joachim, pass in review before him on their way to give battle against the advancing troops from the South. That night, October 8, 1820, news came that Prince Joachim had gone over to the invading enemy, and Christophe shot himself through the heart with a gold bullet. His few remaining faithful followers, headed by his widow, carried the body in the dark night from Sans Souci to the Citadel and covered it with quicklime.

Three miles to the west of the Citadel, on a peak of similar height, another interesting ruin was uncovered in 1927 by an officer of the Gendarmerie, Captain Curtis Whitney, through an obscure reference in the writings of an early Haitian historian. It was there referred to as the Palace of Ramier, or the Wood Dove. There are four small redoubts guarding it, and the ruins of the stables, baths and other buildings. Christophe had by royal edict made the wood dove exempt from being hunted except by himself and court. From an examination of these ruins it would appear that he had begun its erection as a hunting lodge.

Sans Souci

At the foot of the winding trail that leads up from the village of Milot to the Citadel, are the fantastic ruins of the Royal Palace of Sans Souci. They are remarkably well preserved. Here Christophe had his royal court, with a chapel, theatre, gardens, stables, barracks for his personal guard, and a great reception room for the ceremonies of royalty.

Early in 1930 the Travaux Publics completed the new road from Cape Haitien to Milot, following, as straight as the crow flies, the traces of Christophe's famous road. By car this part of the trip may be made over a splendid, straight boulevard, in forty-five minutes. The trail to the Citadel has been steadily improved by the Garde, and is now a two-way pack trail in excellent condition. The time for its round trip is approximately an hour and a half of easy travel. The Garde has not only built a modern sub-district building and rest house at Milot, but has established an outpost at the Citadel, where the Haitian flag, for the first time in Haitian history, was raised with appropriate ceremonies in 1929.

Other Points of Interest

Although war and revolution, followed by pillage and torch, wiped out most of the monuments of Haiti's past glories, the island teems with interest to the traveler. Its life is picturesque and colorful. It has a distinctive charm of its own to the tourist who is satiated with the conventional and commonplace. Its scenery is superb and ever-changing. Its people are simple and hospitable and the great bulk clings tenaciously to old customs, old ceremonials and quaint trades. The streets of its cities and towns are replete with human interest; its roads with market women mounted on their gray bourriques; and its fields with laborers singing at their work. Semi-wild coffee and cotton, and practically every known variety of tropical

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fruit flank the roads, and white-walled, straw-thatched huts delight the eye of the traveler.

The ruins of forts over which the flags of French, Spain or Great Britain once flew are to be found in many parts of the island, many of them still of impressive appearance. In the harbor of Petit Goave alone are the sites of a French, British and pirate fort.

Cape Haitian was the center of the French colonial regime, and in later years the storm center of the many revolutions and civil wars that were waged. The ruins of the old French forts that guarded the entrance and those of the palace built for Pauline, wife of General Leclerc, and sister of Napoleon, are on its outskirts.

Port de Paix is another seaport of historic interest. On the headlands guarding it on either side are well-preserved ruins of the forts built by the French. It, too, was captured from the French in 1694 by the combined English and Spanish fleets. Ten miles to the north of Port de Paix lies the historic island of Tortuga, or La Tortue. First a refuge for French, English and Dutch adventurers who used it as a base to attack merchant craft and for raids on the mainland, it was captured in 1638 by a Spanish force. Later it passed into the hands of English, French, Spanish and Portuguese buccaneers and pirates. When the English gained the upper hand and expelled the French, the French sent an expedition which captured it in 1641. In 1654 they were in turn driven out by the Spanish, and two years later a combined force of French troops and buccaneers recaptured it. It reached its peak as a pirate rendezvous under the rule of the French West Indian Company, and there gathered adventurous and lawless spirits of many nationalities.

Mole Saint Nicolas, at the northwestern extremity of Haiti, was the first point on which Christopher Columbus landed.

Gonaives, on the west, also figured prominently in both the colonial and revolutionary periods. The Independence of Haiti was proclaimed in its Place d'Armes on January 1, 1804, by Dessalines. In 1903 Admiral Killick, of the Haitian Navy, performed a feat of valor in Gonaives harbor that has placed his name high on the rolls of Haitian heroes. Backing the cause of Firmin, he seized a cargo of ammunition and arms from a German liner that was destined for Nord Alexis, then provisional President in the North. Two months later the German gunboat Panther steamed into the harbor and demanded the surrender of the Crete-a-Pierrot, Killick's flagship. He sent his officers and crew ashore before the time of the ultimatum and then blew up his ship and himself. Gonaives in the old days was a favorite pirate base. Today, in the winter months, it is the base of the United States Scouting Fleet.

Port-au-Prince has in its day been held by the British and French, and passed from the hands of one Haitian force into another. With the beautiful Champ de Mars as its center there are many points of interest to the traveler. Near are located the National Palace, Palace of Justice, Palace of Ministers, Garde Headquarters, and Place Petion, where two of Haiti's founders, Petion and Dessalines are buried. A short distance away is the National Penitentiary, famous for the sanguinary massacre that precipitated American intervention. To the north of the Champ de Mars, where parades and band concerts are regularly held, lies the attractive residential district of the capital. The Cathedrals and the markets, and modern sugar mills of the Haitian Sugar Company and Bowen Aviation Field are all within the city limits.

Government

Haiti has a republican form of government. Following the ratification of the Haitian-American Treaty in 1915, its present Constitution was ratified in 1918. Under the treaty the United States pledged itself to stabilize Haiti's finances, maintain order, and carry out plans for the country's rehabilitation.

The legislative power was vested temporarily in a Council of State of 21 members appointed by the President. The restoration of the former Senate and House of Deputies in December, 1929, followed the program laid down by President Hoover's Commission.

The executive power is vested in the President.

The Ministry, appointed by the President, comprises Foreign Relations and Public Worship, Interior and Public Works, Finance and Commerce, Public Instruction and Agriculture and Works, and Justice.

The judicial power is vested in the Tribunal of Cassation, Tribunals of First Instance and Justices of the Peace.

Local government follows the French model, the country being divided into Departments, Arrondissements and Communes, and the last further subdivided into Sections. The heads of the first two are appointed by the President. The Communes are governed either by local officials elected by the people, or by Communal Commissions appointd by the President.

United States Treaty Officials

In accordance with the provisions of the Haitian-American Treaty there are five department heads, or treaty officials, appointed by the President of Haiti upon the nomination of the President of the United States. They are now under the control and supervision of the American Minister.

The titles of the treaty departments are indicative of their functions, viz.: The Garde d'Haiti, Financial Adviser and General Receiver, Public Works Service, Public Health Service, and Agricultural Service. There is in addition a Legal Adviser.

The policy of all departments headed by Treaty Officials is to increase steadily the number of Haitians in each Department, by training engineers, architects, artisans office executives, medical and dental men, clerks, inspectors and other specialists in order to build organizations that will eventually be fitted to function as wholly Haitian organizations under the Haitian Government when the aims of the Treaty shall have been attained.

Garde D'Haiti

The Garde d'Haiti was organized, under the provisions of the Treaty, to ensure preservation of domestic peace and the security of individual rights, and is the sole armed, or police force, of the Haitian Government. It was at first officered only by commissioned and non-commissioned officers of the Marine Corps, and by officers and petty officers of the United States Navy Medical Corps. Excepting 22 commissioned officers of the Marine Corps and Navy of field officer rank, more than 40 per cent of its officers

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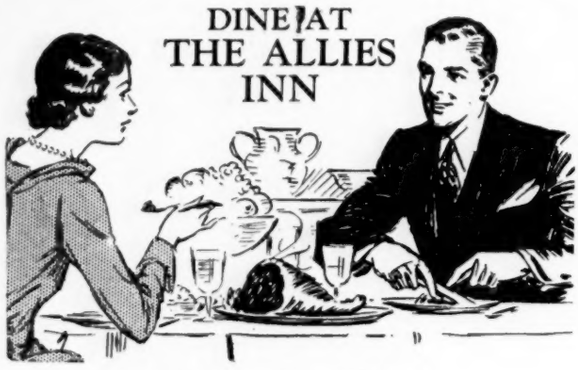

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today are Haitian officers trained under American methods. The total strength of the Garde d'Haiti is 179 officers and 2,537 enlisted men, all of the latter being Haitians. Two departments are wholly officered by Haitians.

An integral unit of the Garde d'Haiti is the Coast Guard, whose principal duty is the operation and maintenance of all navigational aids in Haitian waters. The Police Rurale, with its strength of 551, is under the control and supervision of the Garde d'Haiti. All prisoners and insane in the Republic are under its care and maintenance. The Garde d'Haiti is further charged with the control of traffic; the importation, licensing and sale of all firearms and ammunition; the control of all organized communal Fire Departments; and the prevention of smuggling.

The Ecole Militaire, reestablished in 1928, provides a sound military training for officers appointed from Haitian sources, having both American and Haitian officers on its staff.

Financial Adviser And General Receiver

The offices of Financial Adviser and General Receiver were established by the Treaty of May 3, 1916, between the government of Haiti and the United States. Since 1924 the two offices have been under the direction of a single American official. The duties of the General Receiver as defined in the Treaty are to "collect, receive and apply all customs duties on imports." The duties of the Financial Adviser, according to the Treaty, are to "devise an adequate system of public accounting, aid in increasing the revenues and adjusting them to the expenses, inquire into the validity of the debts of the Republic, enlighten both Governments with reference to all eventual debts, recommend improved methods of collecting and applying the revenues, and make such other recommendations to the Minister of Finance as may be deemed necessary for the welfare and prosperity of Haiti."

The Haitian Government agrees in the Treaty not to "increase its public debt except by previous agreement with the President of the United States," and not to "contract any debt or assume any financial obligation unless the ordinary revenues of the Republic available for that purpose, after defraying the expenses of the Government, shall be adequate to pay the interest and provide a sinking fund for the final discharge of such debt." The Haitian Government further agreed that it will not "without a previous agreement with the President of the United States, modify the customs in a manner to reduce the revenues therefrom."

The functions of the Financial Adviser-General Receiver are exercised through an organization which includes a number of American officials in the central office at Port-au-Prince and American Collectors of Customs at all of the principal ports. There are in all 268 Haitians and 16 Americans in the Customs Service. By the law of June 6, 1924, an Administration of Internal Revenue was established, which is under the immediate direction of an American official under the supervision and control of the General Receiver. This administration has charge of the collection of all internal revenues, and to it has been assigned by the law of July 26, 1927, the administration of the public lands. There are 149 Haitians and 3 Americans in the Internal Revenue Service.

Public Health Service

By virtue of the Treaty of 1915 between the United States and Haiti, the National Public Service was created as a sub-division of the Department of the Interior. It has supervision and direction of all public services of hygiene, sanitation, quarantine, district hospitals, rural clinics and medical education. The Director General is a medical officer of the United States Navy who is ably assisted by medical officers, chief pharmacists and hospital corpsmen of the United States Navy, and by leading physicians of Haiti.

Public Works Service

The construction, and to a very considerable extent the maintenance and repair, of Public Works of the Republic of Haiti is handled by this organization.

The present technical and administrative personnel of the Public Works Service comprises 309 persons, most of whom are citizens of Haiti. The number of artisans and laborers has averaged 5,700 for the past few years, practically all of whom are Haitian citizens.

The work entrusted to this organization may be divided broadly into the following features: public buildings; municipal engineering; irrigation; roads, bridges and trails; harbor improvement; lighthouses and aids to navigation; and telephone-telegraph service.

Agricultural Service

Under this Treaty Department the agricultural and professional education of Haiti is conducted. With a central college for the training of teachers and technicians established, a system of rural agricultural schools, totaling fifty early in 1928, was developed. A system of industrial schools in the cities also reached a total of six for boys and two for girls, in which the most essential subjects are taught and industrial trades practiced.

Now faced with reorganization by the Haitian Government, the salient features established under General Russell's regime may be materially altered, but its framework can hardly be ignored. That included the employment of farm advisers, demonstration farms, veterinarians with free clinics, and the control of insect pests and plant diseases. Provision was made for a central experiment station covering fruits, vegetables, dairy activities, and the breeding of poultry and livestock; a livestock station in the Hinche area and a coffee station in the south. Forestry and fisheries were also provided for, but any progress towards reforestration will be greatly hampered unless a separate corps, entrusted with this work, is provided by the Haitian Government.

(This is the first of a series of articles on Haiti by Colonel Evans. The second will appear in the May Gazette.)

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Aviation in Guerrila Warfare

(Continued from page 39)

ed troops can get into action. Aviation plays an important part in denying the outlaws of this, their favorite and traditional method of operations. "Mystify, mislead and surprise the enemy," was the motto of Stonewall Jackson. "Never do what the enemy expects you to do, if only because he expects it of you," said Napoleon. The airplane is particularly well suited to doing the unexpected, to mystifying and surprising the enemy. It is apparent therefore that aviation, as applied to the principle of surprise, affords the benefits of this principle to our own forces and denies it to a certain extent to the opponents.

MOBILITY depends on the capabilities of men and animals, condition of roads, acclimation to the country and physical fitness. In semi-civilized countries, where roads, if any, are poor, the hardy men of the hills have a decided advantage in mobility. This principle also depends on mechancal aids and since offensive action demands movement, an air force will increase the mobility of ground troops by assisting in their movement, in the movement of supplies and the protection of columns on the march.

The Commander who underrates the importance of SECURITY in guerrilla warfare will not be long in learning his mistake. The opponents are ever vigilant to take advantage of the violation of this principle. Air protection relieves ground commanders of many responsibilities in this connection. Bandit groups, on the other hand, obtain security for their main bodies by withdrawing to strongholds in the hills. The airplane can hunt them out, keep them under observation, annoy them, interfere with their movements and disperse them, thereby denying them, to some extent, their greatest means of security.

ECONOMY OF FORCE is another principle of war which is carried to the nth degree by the forces of a bandit chief. Their main body is normally centralized in a strong, well defended and inaccessible position, while smaller bands sortie, create havoc, destruction and rape, plunder the surrounding districts and return to the natural fortress. These raiding parties return with cattle, supplies and loot of all kinds. The army lives off the fat of the land. The presence of airplanes make these operations more difficult and less successful. The very nature of these operations forces the opponents to split their forces and in fact practically occupy the besieged territory for the protection of civilians and other interests while the main body is being run down. The air furnishes a vital service in maintaining contact between the scattered forces, supplying them, coming to their assistance in time of emergency and allows a corresponding economy for force in direct proportion to the amount of assistance rendered.

Operations carried on by guerrilla forces are SIMPLICITY itself, while the subduing force is prone to get itself involved in rather difficult situations, due to operating from distant bases, long lines of communication, lack of knowledge of the country over which they are operating and the necessity for scattering their forces. Here again the airplane plays the role of binding the organization together and assisting the service of supply, relieving besieged outposts and keeping up the morale. Excellent examples of these accomplishments are on record in Nicaragua and India, which have contributed to the simplicity of what would otherwise have been complicated and involved if not embassassing situation.

The airplane, by its very nature, suggests CO-OPERATION. Its capabilities for facilitating communication, directing ground operations, spotting for artillery, coordinating attacks, obtaining information and aiding administration, afford a means of tieing in many activities and binding the organization together with an ease and finesse not generally recognized today.

Lighter Than Air

Since aviation includes also lighter-than-air, as well as its sister branch, heavier-than-air, we will dismiss the use of the former as applied to guerrilla warfare with the following brief remarks:

Airships in their present state of development are too expensive, too vulnerable and possess too little tactical value that is not incorporated in the heavier-than-air machine. They require large crews to handle them and would be confined to their hangars, even if one could be provided, a large part of the time, due to weather conditions.

Captive balloons are very vulnerable to snipers which would tend to make them short lived in guerrilla warfare where the enemy frequently mingles with friendly and neutral people without disclosing their identity. It would also be expected that friendly inhabitants might be tempted to test their marksmanship on this new type of target. In any case a few incendiary bullets would soon end the existence of the balloon. Also, being dependent upon their transportation, principally to the winch to which they are attached, their mobility would be considerably below normal and in many cases reduced to a negative quantity. The artillery is so ineffective in these small wars, the targets so small, the difficulty of transporting ammunition so great and the enemy so mobile that in the absence of artillery the captive balloon would be minus one of its most important functions. Moreover, since the majority of the enemy movement is on trails, through jungles, in mountainous country or at night, the balloon would have little to observe. Observation under these circumstances requires vertical vision, usually at low altitudes, for which the airplane is better adapted.

Opposing Aviation

Guerrilla warfare does not deny the guerrilla forces the use of aviation, but due to their lack of resources, inability to obtain financial backing to any great extent on account of their status as revolutionists and due to their lack of trained personnel, it is highly improbable that they will be equipped with aircraft. This statement is amply supported by a careful study of guerrilla warfare in the past. In the event that the enemy should be equipped with equal or superior aviation forces we could then expect that the conflict would be lifted from the sphere of guerrilla wars to that of a major war.

While it is within the realm of possibilities in the future, that our guerrilla opponents may be equipped with aviation, that is, when aircraft become cheaper, more common and their use more or less universal, it is not considered that this situation will have to be met in backward countries for a considerable period

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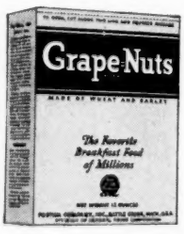

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of time. Even at the present time, should they be able to provide themselves with planes and pilots, their existence would be short lived, as they would be unable to cope with the superior airmanship of a well trained and well equipped organization, and their effect would be practically negligible.

This opinion is thoroughly substantiated by conditions as they exist in Mexico today. The rebels are equipped with a few airplanes but in most cases the planes and pilots have both been hired from across the border. The pilots are mediocre, some mere amateurs, untrained in military aviation and most of the planes are unsuited to military operations, being easy prey for the faster and more modern equipment of the Federal forces.

However, should this situation be confronted, it will be the duty of our air forces to gain and maintain control of the air at once by attacking the hostile airplanes in the air and on the ground. Hostile aviation should be practically annihilated during the opening stages of the campaign, while the ground forces are preparing for action.

A few clippings from the Associated Press will serve to illustrate the situation and support the above remarks:

> "In the first air battle to death ever fought in any Mexican revolution a Federal pilot was an easy victor and sent his rebel adversary crashing from a heighth of four thousand feet." (Associated Press, Mexico City, March 27, 1929.)

Furthermore, due to inferior equipment, rebel pilots frequently quit their missions or are forced down after a few flights. The fact, however, that rebel leaders realize the value of aviation is demonstrated by the fact that they have done everything within their power and resources to so equip themselves, even resorting to the capture of private and non-military equipment. The following report will throw some light on the rebels' realization of the importance of aircraft, their tactical knowledge of their employment and an extreme case resorted to in obtaining their use:

> "Rebels were scouting the advance of General Almazan with air mail planes captured in Saltillo. The planes were operated by government mail pilots, covered by the drawn revolvers of three rebel officers in the cabin of each plane." (Associated Press, Washington Post, March 25, 1929.)

Very little damage has been caused thus far by rebel airplanes, on the other hand reports indicate that the Federals have been able to carry on operations with considerable effect.

> "In the view of observers here, no single factor of the Federal offensive has been so unnerving and destructive of morale among the rebels as the aerial bombardment of trains and camps by the aviators flying in advance of the Calles army. With new planes arriving from the United States this phase of the Federal offensive is sure to be accentuated." (Associated Press, Mexico City, March 31, 1929.)

It is hardly to be expected that a rebel army, living on what it can plunder, and without considerable outside financial support, will ever be equipped with a sizeable air force. In case, however, that they should be so equipped, the tactics of air warfare as laid down for major wars will apply and will not be discussed here. We will, rather, discuss the subject from the standpoint of guerrilla warfare as it is anticipated that will be coped with in the immediate future.

Climatic Conditions

Before launching upon the subject proper and with a view to producing a better and more complete understanding of the difficulties of operation and maintenance of aircraft in this type of warfare, a brief consideration of climatic conditions will be given for the benefit of those who are unfamiliar with meterological difficulties of flying in tropical and semi-tropical countries. Weather conditions in any case will be exceptionally severe. There will be downpours of torrential rain; trade winds from thirty to forty miles an hour, carrying everything before it from fine volcanic dust to tents and airplanes; terrific sand storms, intense heat; mud and many other circumstances tending to enhance the hazards of flying. The high winds are dust-laden in summer and rain-laden in the wet season. They spring up suddenly and die down suddenly and on the other hand they last for days or even seasons. Rain and low clouds render the operation of aircraft over mountainous regions extremely difficult, and make the selection of flying fields of extreme importance.

Especially in desert countries and in other tropical sections during the dry season sand storms are very common and frequently become so severe as to blind the pilot and render flying in their vicinity of the most hazardous nature. Their greatest menace, however, is on the ground. The sand and dust carried by the high velocity of the wind permeates its way into every part of the equipment, the engines, machine guns, bomb racks, controls and installations of all kinds, rendering maintenance a problem that can only be solved by extreme carefulness, a study of preventative measures, constant and thorough workmanship.

Bumps are tremendous, sufficient to be alarming to even the most experienced pilot. The violence of these disturbing concomitants of flying, over mountains, in one of these winds, is hard to describe.

Embarkation and Transportation

While this paper is concerned chiefly with the use of aviation after operations have actually commenced in the field, in view of the fact that it seems to be the general impression that technical units, especially aviation, lack mobility, when it becomes necessary to change their base to distant theatres of operations, it would not be amiss to mention here that in February, 1927, a Marine Squadron, then stationed in San Diego, California, under command of Major Ross E. Rowell, and of which I was a member, serving as Operations Officer, established what is probably a record for a quick get-away. No special preparations had been made for expeditionary duty, other than that equipment for such duty was fairly complete and on hand. All planes were in service and flying daily. Orders to embark the squadron via Naval vessels were received early in the morning of the 16th and the organization was loaded aboard ship, with full equipment for a three months' campaign, and ready to sail at 6:00 p.m. the 18th or in approximately sixty hours, and we landed in Nicaragua nearly ten days ahead of the main body of the expedition.

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The most expedient method of transporting airplanes on ordinary naval vessels, as demonstrated in this and at least one other move which I have made has been to remove the wings and propeller, cover the fuselage with waterproof material (painted canvas works very well), crate the wings in skeleton crates, sufficiently strong to prevent warping and to stand an ordinary short rail journey. It is not even necessary to remove the propeller but is mentioned here as a safety precaution in view of the comparative short time required. The plane minus wings and propeller can easily be hoisted aboard the vessel with special slings and secured to the deck with blocks and lashings.

If rail transportation is necessary after disembarking, this same scheme works admirably with flat cars. The planes are lowered from the decks to the flat cars and there blocked and lashed in such a way that they cannot move either forward or back or sideways. It is then a simple matter on arrival at the destination to tow the fuselages to the airdrome, put the wings and propeller on and take off on the first mission, fully equipped with machine guns, bomb racks, et cetera.

We arrived in Managua early in the afternoon over the battle scarred narrow gauge railroad and two planes were ready to go before dark. Our own trucks, which first had to be unloaded from the flat cars, did the hauling. These results were obtained by the untiring efforts of the Commanding Officer and the spirit and co-operation of the officers and men concerned.

If available an airplane carrier would reduce these operations to their simplest form. Under these circumstances it would merely be necessary to hoist the planes aboard completely set up, in which case they would be ready to take off from the deck and fly immediately to the airdrome on arrival in the vicinity of their destination. In many cases which can be conceived of the carrier could well serve as the airdrome and base of operations, with the addition to the planes of the arresting gear equipment, which could be installed during the voyage. Such cases might be:

(1) At the beginning of operations.
(2) While an airdrome was being constructed.
(3) To nip an insurrection in the bud.
(4) When no airdrome is available, nearer to the scene of operations than the anchorage of the carrier.
(5) Independent air operations, dispensing with necessity of protection for the airdrome.
(6) Short wars.

Strategy

The strategical object of war is the destruction of the enemy's fighting strength. Although, generally in the past, this has been accomplished by pitched battles, in which many casualties have been inflicted and sustained on both sides, it is not necessary to infer from this that such must always be the case, for even in the past not a few battles have been won by surprise and threat of potentiality, rather than by force of arms, and if a battle can be won without suffering loss, surely this is the most economical, if not the most traditional method of gaining the desired end.

Attack the brains of the army. These are the Chieftains and their staffs. As the brain controls the body so the brain controls the army. Get the Chieftains and the army will cease to function, be powerless of coordinated action and will soon cease to exist. It is a well recognized fact that semi-civilized peoples encountered in guerrilla wars are easily led, often shoot well, utilize the terrain to the nth degree, possess by instinct a sense of war and are quick to take advantage of mistakes committed before them, profiting thereby, but it is also just as true that with the loss of their leaders their forces become easily disorganized and as a fighting unit are practically paralyzed; desertions, confusion and surrender following in rapid order. Here we find an effective use for the airplane. It can hunt out and run down the rebel headquarters, the brains of the hostile forces in the field, bomb it, terrorize it, cut off its escape and direct the infantry to it. This is not as simple as it might at first seem because the bush-whacking generals of these wars are very adept at escaping, but nevertheless the possibilities locked up in this bit of strategy should not be overlooked.

Strategical control, by which is meant the ability of a commander to retain control of military operations and to change the objective and direction of the whole force at will, is attained in aviation to a high degree. Due to the limitations of its fuel supply airplanes must necessarily return to their bases after a few hours and in doing so again come immediately under the commanders' control. They can then be used to repeat the same mission or sent to a more decisive point. This is a very great advantage to a commander and constitutes an ever present means of influencing a tactical situation on the ground.

The objective of aviation in guerrilla warfare is the attack of the armed forces of the enemy and their leaders, and the rendering of the utmost assistance to the ground forces through the service of information and its fire power. When given an opportunity aviation can decisively affect ground operations and will constitute a large factor in accomplishing the submission of the enemy. And while our present theory is to "destroy personnel," sight should not be lost of the new theory to "destroy command."

(This is the first of a series of articles by Captain Campbell on the Employment of Aviation in Guerrilla Warfare. Others will appear in succeeding issues of The Gazette.)

The First Quartermaster

The Act of July 11, 1798, provided for a Quartermaster. Second Lieutenant Thomas Wharton is the first Quartermaster of which we have knowledge at the present date. He served from January 22, 1799, to August 1, 1799, when he was relieved by Second Lieutenant Jacob M. Huger, who died on November 8, 1799. Second Lieutenant Michael Reynolds followed Lieutenant Huger as Quartermaster. Among the officers who served as Quartermaster prior to the Act of March 3, 1817, that provided for "one Quartermaster to be taken from the said Captains and Lieutenants," were Second Lieutenant Joseph Woodson, First Lieutenant John Crabb (who was also Paymaster), and First Lieutenant Samuel Bacon.

Captain Alfred Grayson was appointed Quartermaster, under the Act of March 3, 1817, on April 30, 1817. He was followed in turn by First Lieutenant Benjamin Richardson on March 4, 1820 and First Lieutenant Elijah J. Weed on October 17, 1822.

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PARACHUTE JUMPING

(Continued from page 22)

used and which has been constantly in use in the Services for the past ten years. With respect to life saving devices the tendency towards conservation is exceptionally strong and when one has a device that has consistently proven safe, under varied conditions, over a period of years, one which has proven to be an unfailing device thousands of times (actually), and when one has a number of times trusted his life to the devise and never found it wanting, one is inclined to not only strongly favor that particular device but even to be prejudiced in its favor. There are a number of excellent parachutes on the market but the one supplied the service is the one that was "raised" at McCook Field and brought to its present excellent reputation chiefly by the Air Services of the U. S. Army, the Navy, and within recent years by the Marine Corps. The parachute manufactured by the Irving Parachute Co. and known as the Irving 'Chute is the one supplied to the Services. Over 7,500 "live" drops have been made with this parachute without a failure and the last word in safety was spoken when Lieutenant Walter Lees, Army Air Corps, on June 13, 1924, finding that his controls failed, "stepped over the side" at 150 feet. The parachute functioned perfectly and Lees landed safely.

The Service 'chutes are classified as (1) Service, (2) Training Main, and (3) Training Reserve. The Service 'chute is further designated as (a) Leat, (b) Lap, (c) Back. A brief description of the Service type will be given. The subdivision of the Service type into Leat, Lap and Back merely serves to indicate the method of wearing, or rather carrying the parachute, the parachute harness and method and means of opening being the same. A slight modification of the harness to accommodate the lap type was found necessary, but the modification is one of convenience and not of design. It remains practically the same as the leat and back types.

The Service Parachute consists of a silk umbrella, 24 feet in diameter, with woven (or braided) silk cords each cord having a breaking strength of 400 pounds and taking the place of the metal ribs of the umbrella. These cords do not "hinge," or tie, or splice at the apex of the umbrella but are continuous from one side of the parachute to the apex, and continuing down the opposite side of the silk body. At the top of the parachute where these silk cords intersect, there is an opening 18 inches in diameter, a hole in the roof so to speak. Built up from this hole is a silk "chimney" which in turn is closed (or puckered) by a 3-inch rubber vent. This is a safety valve to release the sudden strain on the main body of the parachute at the moment of opening. When normal rate of descent obtains this vent permits sufficient air escape through the constricted opening due to the rubber vent, to assist in the control of the parachute. Attached at the apex to the bight formed by the intersections of the 24 shroud lines, is a lanyard of woven (or braided) silk which is further attached to a small silk parachute, similar to a doll's umbrella, and using four steel rips, spring operated. This is the pilot 'chute, packed in a separate compartment in the pack carrier, the first part to make its appearance (receiving increased impetus to escape by the action of its self-operating springs) and "catching the air" assists in dragging the parachute from its container. The pilot 'chute is not a necessary part of the parachute, but it decreases the time of opening, by reducing the time required by the main 'chute to emerge from the container.

The shroud lines, measuring sixteen feet from the skirt (or bottom) of the parachute to the point of attachment, are divided into four groups. The harness furnishes four three-ply linen webbing supports for these four groups of silk shroud lines. Each linen webbing has a breaking strength of no less than 2,800 pounds. The junction of the webbing supports with the shroud lines is made by means of a "Dee" ring, so called from its shape. The webbing is fastened to the straight bar of the "D" and the group of shroud lines (six per group) is fastened to the curved part of the "D". The main webbing forms a looped seat, like a rope swing without a board seat, extending from two groups (one front and one rear) of shroud lines on one side, down one side of the wearer, under the seat, up the other side to the other two groups of shroud lines. An auxiliary set of webbing is worked into the harness. This consists of a suspender-like arrangement, of webbing, crossing on the back, passing over the shoulders, fastening in front of the chest and passing over each leg, where it is again fastened by a steel snap. The entire auxiliary harness is worked into and is a part of the main harness and is intended to prevent the wearer from capsizing out of the parachute when making a jump. The parachute, shroud lines, and a part of the harness extending above the shoulders of the wearer are packed into a khaki container and then folded back to the cushion position in the seat type, to the shoulders in the back type, or forward in the lap type. In the seat and back type the rig cord which releases the parachute from its container passes from the pack carrier through a flexible metal housing (the housing being attached to the harness) terminating in a large ring. This ring is carried in a pocket which is sewn to the harness (left side) at a point about half way between the shoulder and waist. In some cases it is just below the armpit. In the lap type the ring and ripcord are on the top flap of the pack carrier.

The heavier-than-air services use what is called the "free, manually operated" type of parachute. It is termed "Free Type" because it is carried complete in one unit, strapped to the person of the aviator. It has no attachments whatever to the aircraft and operates entirely independently of the aircraft. In an emergency it is only necessary to jump or drop from the aircraft at any point that is most convenient and the easiest. No avenue of escape is cut off as is the case where the parachute is attached to some part of the aircraft, or where their means of operation depend on some mechanical attachment to the aircraft. It is termed "Manually Operated" because the aviator operates the parachute at will by a slight pull on the "pull ring" which is located in a readily accessible place on the harness. With this medium of operation the aviator can open his parachute immediately after he leaves the aircraft, or if he so desires, or conditions require it, he can make a long "free drop" away from a burning plane or an enemy plane before opening his parachute, the design and construction of the harness preventing any bodily injury from the "opening shock." The "attached" type means

that the opening device or tripping attachment, or in some cases a part of the container is attached to the plane requiring the jumper to leap from a certain side of the plane or through the deck, and further requiring that his body fall faster than the plane or balloon in order that he may "pull against the plane" to force the opening of the parachute.

There will be occasions for the use of both types but the safest and surest type is the "free-manually operated" one, which is self evident. The photograph accompanying this article is one of the writer and describes, in itself, a perfect "get-away"—hands off the ring and head and hands downward, similar to a dive into a pool of water. There is a reason for this form of "jump." The idea is to leave the plane and attempt to place as much distance as possible between it and the aviator attempting to save his life by parachuting. This object cannot be attained by sliding over the side, or by jumping feet foremost. The parachute plus flying clothes, plus, etc., will cause the parachute to extend six inches or more to the rear, endangering the safe exit of the jumper by fouling anything extending out from the side of the plane such as a rocker arm, or it may foul the cowling, etc., and become caught or opened prematurely, in all instances being fatal. Jumping feet foremost deprives the jumper of the horizontal distance obtained by jumping (thrusting with the legs frog fashion) outward and downwards, head first. If the jumper feels that he is going to destruction anyhow what difference is it going to make whether he lands feet first or head first from a height say—oh, anything over one hundred feet? Then why not adopt the surest method. To use a parachute see that everything is clear—take a look at the ring—place both hands on the cowling—place the forward foot (the one on the side of the bow when facing out board) on the cowling and spring outward head first with the hand **off** the ring. Using this method, with the hands "off the ring" one need not count the conventional "one, two, three," but can then immediately grasp the ring and pull it clear of the parachute. Slipping a parachute or attemping to steer a parachute is with our present parachutes wasted effort. A parachute will slip about ten feet in one hundred and considering that the wind is the motive force over the ground and that old man gravity is pulling the parachute to Mother Earth at the rate of sixteen feet per second, the novice had better confine himself to thinking about and preparing for the landing. As described in the notes on the "harness," the jumper will discover that he is sitting in a bight with an auxiliary harness holding him in. At about one hundred and fifty or two hundred feet extend the arms outside and around the vertical parts of the bight which extend up to the shroud line, so that the jumper can clasp his hands in front of his chest and hold these vertical parts close to his ribs and preventing them from extending away from his body when he unfastens the snap fastener on his chest. Next unfasten each leg strap and cast both adrift. Next unfasten the chest snap from the ring and cast that adrift. The jumper now finds himself sitting in a bight holding the uprights close to his body by clasping his hands in front of his chest. Why? Because the writer has seen four men dragged across a field and one severely hurt when a brisk wind filled the parachute on the ground. Inexperienced, poorly instructed (or not instructed at all) jumpers, and young novices, eager for publicity and equipped solely with a statement that they are "going to make the parachute-wise" ingloriously end by being dragged through a barbed-wire fence, sustaining injuries and bequeathing nothing to the world, and leaving it skeptical as to the safety of the device. The jumper, freed from all restrictions of the harness, must land totally relaxed and the expression "as limp as a rag" fits the occasion perfectly. Just before touching the ground the jumper can practically eliminate the shock by shinning himself (seizing the vertical parts of the harness and lifting oneself quickly). The writer finds in his own experience that landing relaxed, on the left side—outboard side of the left ankle, left leg and hip, then as the hip touches the ground to roll (as the tendency will be) over on the stomach. This permits the harness to leave the body without restriction and if a wind is blowing, the jumper is free from the parachute. Landing in water requires a different procedure. The harness should be unfastened as described above but when about ten feet above the water the jumper must leave the parachute. The parachute is made of strong material and if it settles down on the jumper in the water, it acts as a net from which there is little escape and drowning will result. On the other hand, when the jumper leaves the parachute, the 'chute relieved of its burden balloons slightly and drifts free of the spot where the jumper lands.

The "attached type," although not so favored by the flying world, will nevertheless be necessary in commercial use. An automatic seat with an attached type 'chute operated by the pilot, the passenger having "no say" as to its operation, will probably be the solution. The parachute is like a gun. "It will not often be needed but when needed it will be needed quickly." One can well imagine a pilot, in an emergency, trying to persuade a dozen men and women to "dive over and pull the ring." It can't be done. The automatic chair parachute, released suddenly in an emergency will be a trying experience for a few moments to some conservative maiden lady, but when she lands safely and views the wreckage of the plane she will the pilot who dropped her into space.

The parachute today is used, as other means are being used, to promote the selfiish ambitions and to obtain notoriety and advertisment for a few individuals who demonstrate how little they know about parachutes. One of the instructors at the Army Air Corps Parachute School truly remarked that "any damned fool can jump, but any damned fool can't test, inspect, repair, fold, build and maintain parachutes." A parachute—in particular the type we use in the Services—if properly inspected, aired and dried periodically, repaired and maintained (both by the parachute section and the individual pilot) and properly used, will NEFER FAIL. A pilot who tosses his parachute on the ground to fall into the dust, dirt and oil, deserves nothing but the most severe rebuke.

A word about jumping—a deliberate jump, wherein the jumper takes off, gradually climbs to a safe altitude, guides the pilot on the range and then dives over the side, contains the greatest "kick conceivable." It is made by deliberately thrusting aside and overcoming the most elemental force in man—self-preservation. As soon as the plane is left behind, there is no sensation of falling such as one experiences when

riding in a fast elevator. There is no "sickening sensation in the stomach," no rush of air, no strangulation, and in most cases the body will revolve if the opening is sufficiently delayed.

Each pilot should have his own parachute and the harness should be fitted accurately to the body of the pilot. Casual passengers of course cannot have a parachute fitted every time a flight is made, but two things can and should always be adjusted and checked, and that is—the leg straps should be fitted **snugly** to the body and should NEVER be crossed. If the straps are loose or crossed the jumper may receive permanent injury for obvious reasons.

A very spectacular parachute exercise, but one affording no gain or experience, save landing, is for the jumper to take off from the ground standing or lying on a wing and when at the desired altitude, to pull the cord and allow himself to be dragged from the plane. The demonstration gives the appearance of a jump but the jumper avoids the sensation of diving from the plane. In an emergency, a plane will certainly not fly itself while the pilot crawls along the fuselage and then out on a wing, nor do I think a passenger will have time to make a similar move. The need for a parachute to save life calls also for immediate action and a plane on fire, or minus a wing will not offer sufficient time for such action, as a "pull off." The "pull off" is dangerous due to the suggestion that it may give to an inexperienced passenger, who, remembering the demonstration, may in time of danger requiring the use of the 'chute, stand up in the cockpit, open the parachute and be dragged into the tail surfaces to his death, as several already have been so killed.

The parachute is a much needed accessory to flying, and has great need of public confidence. In the opinion of the writer we sorely need a law limiting parachute demonstration by "live" jumps, to qualified parachute riggers who are either qualified in a school recognized by the Government or who qualify by passing an examination prescribed by the Government. What the air-world needs is parachute riggers, not parachute acrobats.

A few general notes may be of interest. Authorities give the terminal velocity of a human falling freely as varying between 108 and 120 miles per hour. The Irving Parachute Co. states "that the speed attained in these drops (i.e. delayed), before opening the parachute, ranges from 150 to 300 miles per hour depending upon the distance dropped and in no case has the aviator or the airchute received any injury from the tremendous opening shocks.

Over 7,500 "live" drops have been made, and over 30,000 "dummy" test drops by the U. S. Government without failure.

The record jump to date recorded, was made at 150 feet altitude. While a number of high altitude jumps are being made, in parachuting, the higher the safer due to the greater length of time given to open the parachute. In the writer's opinion a parachute record would consist of low altitude jumps—a highly dangerous method of gaining notoriety and "free" publicity.

The average time required for the airchute to completely open and assume normal descent is approximately one and three-fifths seconds, and contrary to the general expectation, the parachute opens from the top, downwards. The most recent Marine to qualify for membership in the Caterpillar Club was Captain J. Tillinghas Moore, U. S. M. C., who landed in his parachute in a pool of water in the center of a race track, to the wild cheering of hundreds of citizens of Tientsin, China.

Mentioning China, the writer was afforded the opportunity to visit the Young Marshall, Chiang Hsue-Liang, war lord of Manchuria, in his home in Peking, and demonstrated the service parachute to him, his air force chief and a number of government officials—while his bodyguard stood near with a drawn pistol! The marshal took a camera picture of the writer and Sergeant McFarland, chief rigger, on his front door steps. The photo is shown with this article.

This article would not be complete without a recitation of the parachute riggers' creed which, together with parachute riggers' course at Chanute Field, is so ably taught by Sergeant Harry Wilson, A. C., U. S. Army:

"It is my duty to keep the parachutes of this station in the best possible condition and **I intend to do it.** I will bear in mind that the parachute is a life pack and may be called upon at any time to function properly and quickly to save a human life and to do so must be in perfect condition, folded carefully and properly. That during my monthly folding I will not neglect to make any repair no matter how small; that I want the persons using my parachutes to have the utmost confidence in them by my standing ready to use any parachute folded and packed in my shop."

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First Adjutant and Inspector

When John Adams signed the Act of July 11, 1798, he brought into being a Corps of Marines with a Staff that included an Adjutant but no Inspector.

For about a month Major-Commandant William Ward Burrows tried to get along without a Staff. The first Adjutant of which we now have record of was Captain George Memminger who served as such from August 3 to his death on August 31, 1798. He was the first Marine Officer to die after the Revolution. Second Lieutenant John L. Lewis succeeded him and was followed by Second Lieutenant Robert Rankin on May 1, 1800. First Lieutenant John R. Fenwick became Adjutant on January 1, 1804. Other officers performed the duty of Adjutant until the Act of March 3, 1817, providing for an "Adjutant and Inspector", Brevet Major Samuel Miller (then Adjutant) was appointed the first Adjutant and Inspector on April 30, 1817.

In 1821 the "Committee on Naval Expenditures" recommended to the Secretary of the Navy that the offices of Colonel-Commandant and Quartermaster be abolished and a civil officer perform their duties.

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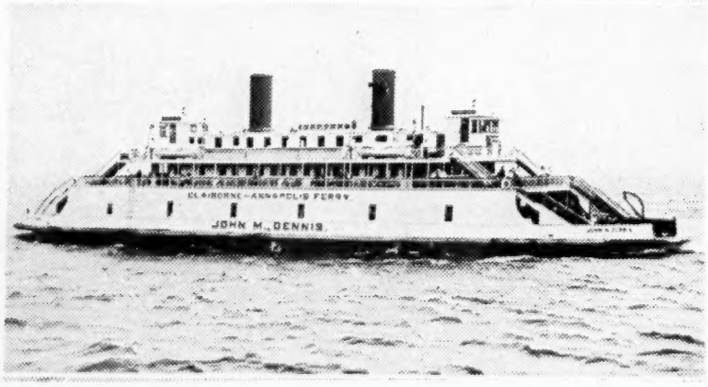

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